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Mississippi Agricultural and Mechanical College reports

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Report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, from the organization of college to Dec. 1st, 1883

Biennial report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, 1884-'85-1890 and 1891

Biennial report of the Trustees, President and other Officers of the Mississippi Agricultural & Mechanical College, 1892 and 1893-<1894-1896>

LLMC 01-490t

REPORT

OF THE

TRUSTEES, PRESIDENT AND OTHER OFFICERS

OF THE

Agricultural and Mechanical College

OF MISSISSIPPI,

FROM THE ORGANIZATION OF COLLEGE TO DEC. 1ST, 1883.

PUBLISHED FOR THE INFORMATION OF THE LEGISLATURE
AND THE PUBLIC.

JACKSON, MISS.:
CLARION STEAM PRINTING ESTABLISHMENT.
1883.

REPORT OF EXECUTIVE COMMITTEE.

Hon. Robert Lowry, Governor and Ex-officio President Board of Trustees:

MY DEAR SIR: We herewith transmit the reports of the President and Professors and that of the Secretary and Treasurer of the Agricultural and Mechanical College, showing the operations of the institution since its organization, and its condition December 1st, 1883. We are prepared to say, from personal examination, that these very satisfactory reports are justified by the actual condition of the institution. We also feel warranted in saying that the success of this College has never been equaled, considering the time it has been in operation, and that the wisdom of the Legislature in providing so liberally for its establishment has been fully demonstrated. There is property now in hand to show for a large part of the expenditure, the income from which in the near future will contribute largely to the support of the institution.

Special attention is called to the excellent discipline of this institution. We think parents should realize the importance of cordially co-operating with the Faculty by discouraging the restless spirit so often displayed by our Southern boys. Now that they must be the architects of their own fortunes, they should be thoroughly impressed with the importance of persistent and systematic adherence to duty as an indispensible preparation for successfully meeting the difficulties and trials of after life. In our opinion nothing will contribute more to the future prosperity and greatness of our State than to have a large number of her young men given a practical education, with the principles of industry, economy, system and self-reliance engrafted in and forming part of it. Such men will succeed and make their impress anywhere, and such it is the aim of this institution to turn out.

We further ask attention to the work being done by the different Professors in furnishing information of a reliable character to the farmers and other citizens of the State. For many purposes the College has really become a bureau of information, and this feature is constantly growing in importance.

Yours respectfully,
H. M. STREET,
W. B. MONTGOMERY,
H. A. MINOR,
Executive Committee.

Report of the President.

AGRICULTURAL COLLEGE, MISSISSIPPI, Dec. 1, 1883.

To the Honorable Board of Trustees Agricultural and Mechanical College of Mississippi:

GENTLEMEN: A clause in the law of Congress partially endowing this institution requires that an annual report be made of its condition and workings. This is the first report submitted to the public, and as the College is now in its fourth year it will be necessary to review its progress as well as give its present condition.

Establishment and Aims of the College.

The Mississippi Agricultural and Mechanical College was chartered February 28th, 1878. It was opened to students October 6th, 1880. It owes its existence to the Act of Congress, approved July 2d, 1862, "donating public lands to the several States and Territories, which may provide Colleges for the benefit of agriculture and the mechanic arts." Section 4 of this Act reads: "And be it further enacted, That all moneys derived from the sales of land aforesaid by the States to which the lands are apportioned, and from the sale of land scrip, hereinbefore provided for, shall be invested in stocks of the United States or of the States, or of some other safe stocks, yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in 5th section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such a manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The State of Mississippi, in accepting the conditions of this Act of Congress, and by her Act approved February 28th, 1878, prescribed in the powers given to the Board of Trustees:

"The establishment and maintenance of a first-class institution, at which the youth of the State may acquire a common sdhool education and a scientific and practical knowledge of agriculture, horticulture and the mechanic arts, also the proper growth and care of stock; without, however, excluding other scientific and classical studies, including military tactics. They shall regulate the course of study, rates of tuition, management of experimental farm, manner of performing labor and the kind of labor to be performed by students."

These two acts of the General and State Governments, plainly define the objects of the College. The leading object must be: "to benefit agriculture and the mechanic arts." Should other studies be taught than those relating to these interests, they should be considered secondary, and rather as instruments to more readily comprehend the sciences which underlie agriculture and the mechanic arts.

The complexion of the College must be such as to familiarize students with the leading objects as set forth in the Acts, viz: To educate and direct their minds and tastes to agriculture, horticulture, care and growth of stock, management of farms, manner of performing labor and the mechanic arts.

This necessitates that special stress should be laid on the sciences, such as chemistry, botany, geology, zoology, entomology, physiology, physics, mechanics, mathematics, etc., which underlie agriculture and the mechanic arts. To understand properly these sciences, a liberal education, especially in English, is requisite. The varied conditions contributing to an intelligent understanding of agriculture as a science and an art, includes an education as broad and liberal as that needed in mastering any profession; it differs, however in kind: it is to be industrial and practical. Students must be familiar, not only with farms and labor, but must also labor themselves, and this labor is a part of their education. It is educational in so far as it is in illustration of studies taught in the recitation room.

Endowment Fund.

The condition of the land scrip fund donated by the U. S. Government, and which is the endowment fund, is as follows: The script represented 207,920 acres of public land, which was sold for about ninety cents an acre, realizing in currency $188,928. This amount, by judicious management, has been increased to $227,500, which was in the State treasury, represented by twenty-year bonds, running from 1876 to 1896, bearing five per cent. interest per annum. The last Legislature (under the provisions of the Congressional Act), sold $15,000 of these bonds to invest in lands for this College, so that the amount now covered by bonds in the treasury is $212,150. This fund, by the terms of the State Act of February 28, 1878, is equally divided between Alcorn University and this College, giving to the former $113,575 and to this College $98,575, yielding an income annually to the College of $4,928 75, which is all that is derived from this source.

Legislative Appropriations.

As no portion of the land scrip fund or the interest derived from it can be used under the Act, "directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings," and as the income from the fund can only be used, as far as it goes, towards meeting other expenses, the State incurs the obligation, in accepting the gift, to provide the buildings, equipment and additional support necessary.

The last two Legislatures have handsomely and generously complied with the obligation. They have provided in grounds, buildings and equipments for this College a property valued at $174,857, which is exceeded by only twelve similar institutions, out of forty-seven now in operation in the United States.

The appropriations made in the winter 1879 and 1880 were $85,000; in the winter of 1881 and 1882, $120,000; total, $205,000. These two appropriations were made to provide the necessary grounds, buildings and equipment and provide for its support until the winter of 1883 and 1884.

Buildings, Grounds, Equipment, etc.

The Board of Trustees, with the donation made by the citizens of Starkville ($9,000) and the appropriations, have erected a College building (three-story) containing a chapel and fourteen recitation rooms; a dormitory building (three-story including basement) containing 115 rooms, a large library room, writing room, and large room for department of biology; capacity of building, 250 students; a chemical laboratory (two stories) with large lecture room, room for fifty students to work at analysis, combustion room, private laboratory of professor, store rooms, etc , a hospital for accommodation of sick persons, a mess hall and Society rooms for 300 students, with large range for cooking and store rooms; also, complete mess outfit in way of crockery, etc.; seven Professors' houses, three small houses for Secretary and Treasurer, for Steward and Janitor, and for Surgeon; a farm house, two large cattle and horse barns, engine house, cattle and wagon sheds for farm department, stable and sheds for horticultural department; 2000 acres of land. Have equipped the several scientific and academic departments. The chemical laboratory and biological department have expensive and valuable outfits. The mathematical department is well supplied with instruments. The farm department has herds of thoroughbred, graded and common cattle, improved implements and machinery, mules, etc. The horticultural department also is supplied with a good working outfit, has a commercial nursery, orchards, gardens, etc. Have also provided a library of 2200 volumes.

A recent inventory made by three disinterested citizens (Messrs. W. L. Hemingway, M. L Jenkins and Mat Mahoner) shows a valuation of property amounting to $174,857, actual appropriations from State Treasury being $205,000.

Character of Institution—Faculty, Officers, etc.

The College as now in operation is a first-class institution. The

Faculty consists of a President, seven Professors (one furnished by the U. S. Government), filling the chairs of English, mathematics, biology (botany, geology, anatomy, physiology, veterinary science, zoology,) scientific and practical agriculture, scientific and practical horticulture and entomology, chemistry and physics, military science and tactics. In addition to these Professors there are assistant Professors of English, mathematics and preparatory department (3), an assistant in the department of chemistry, an instructor in free hand and mechanical drawing, one in writing, one in book keeping, two tutors in the preparatory department, Steward of the mess hall, and the Secretary of the Board of Trustees and College, who keeps all accounts of College and students.

The salaries are: President, $2500; Professors, $2000; Assistant Professors, $800; Assistant in chemistry, $600; Instructor in drawing, $400; in writing, $500; in book-keeping, $100; two Tutors, Preparatory Departments, $360 each; Steward and Janitor, $900; Secretary and Treasurer, $1200.

The Faculty give, as indicated by the State law, a common school education in the Preparatory department; and in the College department a liberal education in English, Mathematics and Ethics; and a scientific and practical education in agriculture and the mechanic arts. It is an able Faculty. There is not a discordant element in it. Each one is using his best endeavors to build up the College. They believe in industrial education. They are confident of the future and have no doubts or distrust as to results.

First Three Years of the College.

The College was a successful institution from its first opening, requiring a full Faculty both in the College and Preparatory departments. It shows a more successful opening and progress for the three years than is shown by any one of the similar State institutions receiving the benefit of the Federal Act. It has turned out a class of eight graduates in the three years, and has had, and now has with few exceptions, as many students in the Colleges classes, and also in the Preparatory department, as is shown by the report of the forty-seven similar institutions for 1881. (See report of U. S. Commissioner of Education for 1881.)

First Year—354 students—87 in College classes; 267 in Preparatory department.

Second Year—304 students—150 in College classes; 154 in Preparatory department.

Third Year—317 students—148 in College classes; 169 in Preparatory department.

Instruction.

There is a single course of study, extending over two years, and four years Collegiate. Only common English studies are required in the Preparatory department, as the law prescribes a common school education.

The Collegiate course is as follows:

Freshman Class—Algebra, Geometry, English, Outlines of History, Agriculture, Botany, Natural Philosophy, Book-keeping, Writing.

Sophomore Class—Geometry, Trigonometry, Surveying, English, Elementary Chemistry, Blow-pipe Analysis, Chemical Analysis, Organic Chemistry.

Junior Class—Mechanics, Mechanical Drawing, English, Horticulture, Anatomy, Physiology, Veterinary Science, Agricultural Chemistry, Chemical Physics, Free-hand Drawing, Physical Geography, Military Tactics.

Senior Class—Astronomy, Civil Engineering, Agriculture, Meteorology, Entomology. Political Economy, Constitution of the United States, Microscopic Botany, Military Science, Geology, Moral Philosophy, English.

Preparatory Department.

Arithmetic, Elementary Grammar, Composition, Spelling, Reading, Writing, Declamation, English Grammar, Geography, Algebra, Analysis, U. S. History.

Before admission all students are examined and graded. If for the Freshman class, they must be thorough in Arithmetic, Geography, Grammar, Reading, Spelling and Writing. Students will be admitted into the Freshman or any more advanced class at any time, provided they can stand an examination in all the previous studies of the course. For admission into the Preparatory department one must be able to read ordinary prose readily, to spell words in common use, to write simple English sentences, and to read and write numbers with facility. He must also be thoroughly acquainted with the fundamental rules of Arithmetic.

The Energies of the College.

The energies of the College are at present centered on Agricultural education. The Board of Trustees did not deem the funds at their disposal sufficient to construct and equip shops for wood and iron, and at the same time thoroughly equip the College as an Agricultural College. Mechanical instruction is only taught far enough to cover what is deemed necessary to complete a farmer's education, and not to instruct students in the different trades. Agriculture is the prevailing occupation in our State, and it was deemed best to aid this industry first, as it would benefit the greatest number. The organization of the College is now complete in this direction, and now, for the first time, we are ready (without doing injury to our agricultural interests), and with the addition of a limited number of shops and supply of machinery, to develop fully the mechanical feature. The curriculum of studies, with slight variation, is nearly the same. The Sea Coast counties and other localities of the State are urging a proper organization of this feature, so as to enable boys to become familiar with what is required in the trades.

The Departments of the College.

The scientific departments of Biology, Chemistry and Physics are well equipped for work and illustration, having ample apparatus. The department of Biology has the cabinet of minerals, soils and fossils presented by the last Legislature; also a large collection of other minerals and rocks; is provided with human and animal skeletons, life-size charts, herbarium, wood specimens, etc.

The departments of Agriculture and Horticulture may be termed both scientific and industrial. The teaching of the sciences themselves, presupposes, to a certain extent, a knowledge of biology and chemistry underlying them. Besides the theoretical instruction, students are instructed practically in the field, barn, pastures, orchards, nursery, gardens, with care and growth of stock, with improved implements, etc., necessary for illustration. Both of the departments have facilities for instruction and illustration.

The departments of English and Mathematics are well organized and are laying the foundation of a thorough English and mathematical education, progressive and commensurate with a knowledge of the sciences.

The Preparatory Department is under the immediate supervision of the professors of English and mathematics, with their assistants and the assistant professor in the department and the two tutors. It is doing thorough elementary work.

The instructor in writing has charge of sophomore and freshman classes, and also the preparatory students.

The instructor in mechanical and free-hand drawing has charge of the junior class six months.

The instructor in book-keeping has charge of the freshman class three months.

Daily Routine.

In daily routine the academic exercises take place in the morning, and the industrial and military in the afternoon. The time for preparation of studies is after supper until 10 P. M., and in the morning before chapel exercises.

Military Feature.

Military discipline is the established discipline of the College. The U. S. Government details an accomplished officer of the army as professor of military science and tactics and commandant of students. It also supplies the College with two pieces of artillery, 150 stands of rifles, accoutrements, etc., also with a supply of ammunition for practice.

The discipline is mild but firm, and pervades every department of the College in so far as the students are concerned. It is effective in the academic and industrial departments alike. Student officers being generally the foremen under the professors in charge of work. It expedites and facilitates the workings of the College. The students do not average one drill a week during the year. As special stress is laid on this military feature in the Federal act, it was thought best by the Board of Trustees to have military discipline.

The Industrial Feature.

All students are required to work from two to three hours a day, four or five days during the week, on the farm, among stock, in the garden, nursery, or shops for ordinary repairs, or on grounds. The amount of work done by each student depends much on the student himself, the conditions of his health, his habit of work, the state of the weather, etc. A student realizing the importance and necessity of work in his particular case, accomplishes more than one who needs the pressure of watching and discipline to enforce it. In practice, therefore, some students accomplish much more than others, although all are compelled to work, and are punished when they avoid work. Our experience so far shows that the students who work best within prescribed limits, stand highest in their classes and enjoy best health. This feature enables our Mississippi boys of real worth and moderate means to be educated at far less expense than they can get an education at any other institution. It also inculcates and retains habits of industry at that period of life when education is being obtained. At most other institutions no labor is done during this period, and a disinclination to work, from habit, is apt to be imbibed. It makes labor honorable and demonstrates that labor and a high standard of liberal and scientific education are not incompatible, but go hand in hand with the struggle of life, and in developing our industries and resources. It is essential that theory and practice go together in the education of the farmer and mechanic. This is true of other professions, why not with the farmer? The labor feature in this College corresponds with the technical and expensive instruction (not given in the class room) that is given at West Point and Annapolis in the numerous drills, encampments, cruises, etc.; that is given in the hospitals and dissection rooms of the medical colleges; in the moot courts of the law school; in the field work of the engineer; in the shops of the mechanic. All the employees needed, apparatus and machinery bought, and instruction given technically in these different lines is considered very necessary and important. They are the working laboratories of instruction. It involves great expense. All education is expensive. Must the farmer alone get cheap education? Is he and the mechanic alone to be uneducated in their specialties? There is no immediate return in all the expense incurred in educating for the callings named, in way of profit, except in the future returns to the country, in having educated men for their special work.

There is considerable return at this College in way of crops, sales of stock, vegetables, nursery stock, etc., improvement of grounds, permanent improvements, etc., besides the educational feature that has no visible return in the technical instruction alluded to in other callings and professions.

Our books show that many Mississippi boys of small means are being educated here, through the assistance of their labor, who could not be educated in any other way.

At this College, the instruction received in way of education in the academic and scientific departments is of the first importance —nothing can take precedence over it. Next in importance are the industrial features, and the assistance the student is enabled to receive pecuniarily. It differs from the old manual labor school in this: There the important matter was to work enough to pay all expenses. The education received was of secondary consideration, compared with earning enough money to pay one's way. The boy who labors most of his time physically is too tired to accomplish much at his studies, whereas moderate labor facilitates study.

For a long time, our people did not understand this feature. They thought the boy could work his way through and get a first-class education too. Many boys came here under this delusion although they knew they could not do it at home. A student here has many advantages. He not only gets his tuition free from the State, but he has an opportunity to work, and pay from one-half to two-thirds or more of his board. If he remained at home he would still have to incur expense of board and clothing, which are unavoidable even in attending school under any conditions; but even with this understanding, and the disappointment incident to it, we have had over 300 boys every year—more than any institution in the State.

Expenses.

Tuition is free to all Mississippi boys. A matriculation fee of $5 is charged every student on entering; but once paid, insures a full course at the College. A fee of $5 a year is also charged to enable students to get the services of a doctor and medicine. By this arrangement they are well and cheaply attended to during sickness. The average cost of board per month has been about $9. The uniform of a cadet (gray coat, pants, vest and cap) costs $17. To reduce these expenses, students are required to work from two to three hours, four or five days in the week; and also, work is optional with them on Saturday, on which day some students work from six to ten hours. Students can make by their work from $30 to $60 a year, in the way of meeting their expenses. Many students have each year got through on a total expense of from $50 to $75 obtained from home. The average student gets through on an expense of $100.

THE LAW APPORTIONING STUDENTS AMONG THE COUNTIES IN PROPORTION TO THE NUMBER OF EDUCABLE WHITE CHILDREN.

This law, after an experience of two years, is found not to work well, and the friends of the College in different portions of the State advise its repeal. It is unnecessary now, since the completion of the College buildings. All students who desire to come can be provided for. It has been found that many students who want to attend, arrange to go elsewhere when they cannot learn definitely at first whether they can be admitted. They do not like the delay, and also the examination before County Superintendents of Education. They consider this arrangement rather on the red tape order, and it is used by canvassers for other Colleges against this institution.

Has the College Accomplished what it was Intended for?

By an examination of the official reports of the United States Commissioner of Education for the years 1871, 1877, 1878, 1879, 1880 and 1881, and from other sources of information, we discover that not one of the forty-seven State Colleges, known as Schools of Science—Mining, Engineering, Agricultural, etc., partially endowed with the national land grant, has had as many students in the first three years, and so nearly divided between the college classes and preparatory department, as the Mississippi College. The report of 1881 shows that out of forty-seven State Colleges of a similar character, this College has more students in the regular college classes than thirty-nine of them. Only eight, which are heavily endowed, and been in operation a much longer time, such as Cornell University, New York; Sheffield Scientific School, Massachusetts; the Michigan College, Illinois Industrial University, and Iowa College, have more students in the different college classes than this institution.

Our first class graduated the third year. In the second year we had 150 students in the college classes, and in the third year 148 students. Twenty-one of these institutions report preparatory departments. By the report of 1881 only three of them had more students than this College has had in each of the three years of its existence.

Our statistics for the years 1882 and 1883 show that of all the students who matriculated, 55 per eent were the sons of farmers, and 85 per cent., including the sons of farmers, belong to the industrial or working classes. This shows that the College is being patronized mainly by the classes it was intended to benefit.

Separate Institution—A Success.

Before the organization of this College as an industrial institution, and on a compulsory basis, the University at Oxford had the benefit of the income of the endowment fund we now have. They also had substantially the same curriculum we have—a school of agriculture and the mechanical arts—as one of the schools of the University. They have an able faculty. No students attended this school for several years. At no time did they have more than twelve students taking the scientific course of this school. When this institution was established as an Agricultural and Mechanical College, separate and distinct from the University, we have had each year an attendance of over 300 students, and at the same time not injuring that successful institution. This shows that an Agricultural College in this State could not flourish as an adjunct of the University, but when organized as a separate institution it is a success. It shows, further, that the boys who attend this College desire the education we give. It shows, also, that this College has more than doubled the number of boys in the State who attend the State institutions established for whites, as Oxford has suffered no diminution in its attendance.

STEADY INCREASE OF DEMANDS FOR AGRICULTURAL INFORMATION FROM CITIZENS OF THE STATE.

The demands made on the different professors of the College for information in their respective lines, by our farmers, is a most encouraging feature and is steadily increasing. It shows that the College is meeting a long-felt want among our industrial classes. We are furnishing reliable information, from an official source, and of a character to advance our material interests. It is an official bureau of information. It shows the importance of scientific and practical information combined, and places a higher estimate on the education furnished by this College. Education is not only power, but it is confidence. Its possessors not only act with intelligence, but with the confidence incident to its possession. The professors of Biology, Chemistry, Agriculture and Horticulture give almost as much of their time to answering letters and giving information as they give in their different College duties. The correspondents want information as to farming, care and growth of stock, equipment of farms, manipulation of fertilizers, application of fertilizers, analysis of marls, water, soils, value, classification of grasses, etc.

The chemist here is also the State Chemist, and is doing a most valuable work in the analysis of fertilizers and in furnishing formula for manipulation of compost heaps, where the farmers tell what material they have on their farms.

Bias of the College.

As an evidence of the kind of instruction given at the College and its effect on the body of students, it is a fact that nearly all of our Commencement orations and essays are on agricultural and industrial subjects.

Agricultural Education.

With two exceptions—Michigan and Kansas—the Mississippi College is instructing more students in the science and art of agriculture than any other similar College in the United States.

Summary.

The statistical information is given for the benefit of the Mississippi Legislature, which has been so liberal that they may see what has been accomplished, how successful the College has been and what its future prospects are. The faculty is necessarily a large one, owing to the large attendance of students. The main expense for the future is the salaries of professors and assistants. The industrial departments, when sufficiently developed, in a few years will be self-sustaining. It will be at least a year or more before our stock investments will begin to pay by natural increase. The same is true of our nursery and other features.

All that is asked now from the Legislature is a support for the faculty, and the pay of student labor for two years. After that time, it is hoped that the industrial departments will pay a large per cent. of their own expenses, including student labor. It is not considered unreasonable, with an equal number of students in attendance, to ask the State for an equal appropriation, to that given annually to the State University. The two institutions in no way antagonise each other. Their courses of study are dissimilar. One is the depository of a literary and classical educa-education, the other of industrial and practical education. There is room for both, and more work than both can do.

Only Mississippi Boys taken, so far.

The Board of Trustees have confined the students in attendance to boys from the State of Mississippi, so far, This is not the case at other institutions. We have declined about 100 students from other States during the last session.

I refer to the report of the Secretary for detailed statement of expenditures for three years, and up to December 1st, 1883. Also to the reports of the several professors, in their respective departments, as to their condition and management.

Respectfully submitted,

S. D. LEE, President.

ATTENDANCE BY COUNTIES.

LIST OF COUNTIES, AND ATTENDANCE FROM EACH, AT THE A. & M. COLLEGE DURING THE FIRST THREE SESSIONS, 1880 & 1881; 1881 & 1882; 1882 & 1883.

COUNTIES.	Session 1880 & 1881..	Session 1881 & 1882..	Session 1882 & 1883..	COUNTIES.	Session 1880 & 1881..	Session 1881 & 1882..	Session 1882 & 1883..
Adams	..	..	1	Lincoln	1	1	3
Alcorn	2	4	..	Lowndes	27	18	10
Amite	..	2	7	Madison	10	4	11
Attala	..	..	6	Marion	..	..	..
Benton	..	..	..	Marshall	..	1	3
Bolivar	3	1	..	Monroe	29	18	12
Calhoun	3	1	1	Montgomery	4	1	..
Carroll	9	9	2	Neshoba	..	..	2
Chickasaw	7	10	7	Newton	1	1	..
Choctaw	1	..	..	Noxubee	24	22	16
Claiborne	1	..	3	Oktibbeha	78	60	55
Clarke	1	2	4	Panola	4	5	11
Clay	4	8	5	Perry	..	1	1
Coahoma	..	..	..	Pike	6	3	10
Copiah	7	8	5	Pontotoc	1	2	6
Covington	..	..	1	Prentiss	15	7	3
DeSoto	9	5	5	Quitman	..	..	..
Franklin	7	2	4	Rankin	10	8	6
Greene	1	1	..	Scott	..	1	..
Grenada	6	3	1	Sharkey	..	..	1
Hancock	..	..	3	Simpson	2	..	..
Harrison	1	..	3	Smith	1	..	3
Hinds	13	16	14	Webster	4	1	2
Holmes	6	12	12	Sunflower	2	..	1
Issaquena	..	..	..	Tallahatchie	1	..	..
Itawamba	1	1	..	Tate	2	2	7
Jackson	1	..	3	Tippah	..	1	..
Jasper	2	1	2	Tishomingo	1	..	3
Jefferson	2	2	1	Tunica	..	..	2
Jones	..	..	2	Union	..	..	..
Kemper	4	2	4	Warren	1	4	2
Lafayette	2	2	2	Washington	1	..	3
Lauderdale	11	8	6	Wilkinson	6	4	7
Lawrence	1	4	2	Wayne	1	2	1
Leake	..	..	3	Winston	8	7	..
Lee	4	11	7	Yalobusha	..	1	3
Leflore	1	1	6	Yazoo	..	2	9

It will appear from above table that every county in the State has been represented at the College, excepting the counties of Benton Coahoma, Issaquena, Marion, Quitman, and Union, (6 counties.) Sixty-eight out of seventy-four counties have had students at the College during the three sessions. The students from Oktibbeha county are mostly day students, and do not inter-

fere with attendance of students from other counties in Dormitory.

REPORT OF SECRETARY.

A. & M. COLLEGE OF MISSISSIPPI.
AGRICULTURAL COLLEGE, Dec. 1, 1883.

Gen'l S. D. Lee, President:

DEAR SIR—I herewith submit my report as Secretary of the A. & M. College of Mississippi, which embraces all receipts and disbursements since the organization of the College under the head of "General Statement"; also classified statement of each department. The itemized statements, with vouchers properly numbered, approved and receipted, are on file at my office, and have been examined and approved by the Finance Committee of the Board of Trustees, up to June 9th last. All bills have been paid, and we still have at Jackson, out of last appropriation, a balance of $526.50, General Fund; $1093.75 Land Fund, and $325.40 Permanent Improvement Fund —making a total of $1945.62. The interest on Land Scrip, for the year 1883, will be due January 1st, 1884—amount $4928.75. The Coal Account shows an indebtedness of $403.17, but we have the coal on hand, which will be paid for by students. The incidental expenses of the College seem large, and perhaps need some explanation. Under this head are the expenses of members of the Board of Trustees for attending meetings, the coal and chalk, etc., used in recitation rooms, the pay of ministers for holding divine services, the expenses of our Commencement, the Sanitarian, and various other things necessarily attendant upon an institution of this kind. The steward's account is closed monthly by charging the actual expense to the students.

Each student is required to deposit at least ten dollars in advance on board, and, I am pleased to say, the College has not lost a dollar by a student failing to pay his dues, since my connection with the College. I attach to the Statement of the Finances a copy of the Inventory of Property taken by a committee of three prominent citizens of the State last June, showing a property valuation of $174,857.09. Since this inventory was taken we have increased our property by purchase, as follows:

Thoroughbred cattle at farm	$2,500 00
Cooking range for steward's department	500 00
One pair horses for steward's department	250 00
Books for library	150 00
Equipment of writing room, drawing material, Secretary's office and Faculty room	350 00
Chemical apparatus	500 00
Specimens, etc., Biological Dep't	250 00
Total	$4,500 00
Which added to Inventory makes	$179,357 09

This does not include the natural increase of the stock at the farm, nor the increased value of the nursery stock in Horticultural Department. Respectfully submitted,

T. F. WATSON,
Sec'y A. & M. College.

GENERAL STATEMENT.

RECEIPTS.

1879.	Land from subscriptions..	$ 400 00	
	Land from State Treasurer.	1,236 10	
1881.	Land from State Treasurer.	2,096 00	
1882–83.	Land from State Treasurer.	13,906 28	
	Land from subscription....	400 00	$18,038 38
1879–80.	Building from subscription	4,500 53	
	Building from State Treasurer..................	57,626 46	
1881–82.	*Building from* State Treasurer..................	3,650 28	
1882–83.	Building from State Treasurer..................	28,802 50	94,579 77
1880–81.	Salaries from State Treasurer..................	13,481 97	
1881–82.	Salaries from State Treasurer..................	18,484 20	
1882–83.	Salaries from State Treasurer..................	26,782 81	58,748 98
1879–80.	College from State Treasurer..................	6,255 49	
	College from subscriptions.	73 73	
1880–81.	College from State Treasurer..................	5,092 14	
	College from matriculations	1,705 00	
	College from sale of books, furniture, etc..........	1,670 76	
	College from Gen. George..	50 00	
1881–82.	College from State Treasurer..................	2,236 43	
	College from matriculations	770 00	
	College from sale of books, furniture, etc.,........	334 20	
1882–83.	College from State Treasurer..................	4,720 54	
	College from matriculations	1,450 00	
	College from subscriptions.	103 33	24,461 62
1880–81.	Farm from subscriptions..	664 23	
	Farm from State Treasurer	8,824 00	
	Farm from sale produce...	1,014 16	
1881–82.	Farm from State Treasurer	8,421 75	
	Farm from sale milk & beef	617 92	
	Farm from sale field crops.	328 01	
1882–83.	Farm from State Treasurer	15,645 26	
	Farm from sale milk & beef	3,612 27	
	Farm from sale field crops.	967 95	40,095 55
1881–82.	Horticultural from State Treasurer.............	474 54	
	Horticultural from sale of vegetables....	76 40	

1882–83.	Horticultural from State Treasurer	3,646 41		
	Horticultural from sale of vegetables	830 73	5,028 11	
1880–81.	Chemical from State Treasurer	1,990 00		
	Chemical from students for chemicals	136 44		
1881–82.	Chemical from State Treasurer	444 13		
	Chemical from students for chemicals	260 65		
	Chemical from State Treasurer	1,705 87		
	Chemical from students for chemicals	351 25		
	Chemical from fees for for analysis	1,048 00	5,936 34	
1880–81.	Student Labor from State Treasurer	5,425 00		
1881–82.	Student Labor from State Treasurer	4,392 45		
	Student Labor from Farm Dep't	232 81		
1882–83.	Student Labor from State Treasurer	6,417 83	16,468 09	
1882–83.	Library from State Treasurer	2,500 00	2,500 00	
	Biology from State Treasurer	1,879 00	1,879 00	
1881–82.	Coal from State Treasurer	900 00		
	Coal from sundries for coal	1,028 15		
1882–83.	Coal from sundries for coal	1,892 97	3,821 12	
	Hospital from State Treasurer	367 78	367 78	
	Entomology from State Treasurer	195 01	195 01	
				$272,119 75

DISBURSEMENTS.

1879.	Land, amount paid	$ 1,636 10	
1881.	Land, amount paid	2,096 00	
1882–83.	Land, amount paid	14,306 28	$18,038 38
1879–80.	Building, amount paid	62,126 99	
1881–82.	Building, amount paid	3,650 28	
1882–83.	Building, amount paid	28,827 10	94,604 37
1880–81.	Salaries, amount paid	13,481 97	
1881–82.	Salaries, amount paid	18,484 20	
1882–83.	Salaries, amount paid	26,782 81	58,748 98
1879.	College, amount paid	6,330 49	
1880–81.	College, amount paid	7,794 30	
1881–82.	College, amount paid	3,821 76	
1882–83.	College, amount paid	6,008 90	23,955 45
1880–81.	Farm, amount paid	10,092 45	
1881–82.	Farm, amount paid	7,019 79	
1882–83.	Farm, amount paid	22,931 12	40,043 36
1881–82.	Horticultural, amount paid.	377 29	
1882–83.	Horticultural, amount paid.	4,402 16	4,779 45
1880–81.	Chemical, amount paid	2,169 66	
1881–82.	Chemical, amount paid	661 56	
1882–83.	Chemical, amount paid	3,100 93	5,932 15

1880–81.	Student Labor, am't paid..	5,442 29		
1881–82.	Student Labor, am't paid..	4,607 97		
1882–83.	Student Labor, am't paid..	6,417 83	16,468 09	
1882–83.	Library, amount paid......	1,844 46	1,844 46	
1882–83.	Biology, amount paid......	1,864 56	1,864 56	
1881–82.	Coal, amount paid.........	1,193 62		
1882–83.	Coal, amount paid.........	3,030 67	4,224 29	
	Hospital, amount paid.....	367 78	367 78	
	Entomology, amount paid.		195 01	
	Cash on hand.........		1,053 42	
				$272,119 75

Inventory of Property.

College Buildings	$ 99,800 00
Land	33,087 50
Miscellaneous property	3,217 85
Hospital “	350 00
Laboratory “	2,502 13
Biology “	1,489 01
Steward's dep't “	1,346 00
Farm Buildings	4,520 00
“ Machinery	2,445 00
“ Produce	500 00
“ Growing Crops	3,620 00
“ Stock	11,341 00
“ Miscellaneous	3,400 00
“ Implements	1,151 00
Horticultural—Permanent Improvements	390 00
“ Stock	600 00
“ Implements	309 35
“ Fertilizers	42 00
“ Growing Crops	340 00
“ Produce	40 00
“ Nursery Stock	4,366 25
Grand total	$174,857 09

Land.

RECEIPTS.

1879.	From State Treasurer......	$ 1,236 10		
1879.	From subscriptions.........	400 00		
			$ 1,636 10	
1881.	From State Treasurer......	2,096 00		
			$ 2,096 00	
1882–83.	From State Treasurer......	13,906 28		
1882–83.	From Subscriptions.......	400 00		
			$14,306 28	
				$18,038 38

DISBURSEMENTS.

1879.	Paid for land.............	1,636 10		
			$ 1,636 10	
1881.	Paid for land.............	2,096 00		
			$ 2,096 00	
1882–83.	Paid for land.............	14,306 28		
			$14,306 28	
				$18,038 38

Building.

RECEIPTS.

1879–80.	From State Treasurer......	57,626 46	
	From Subscriptions........	4,500 53	
			$62,126 99

1881–82.	From State Treasurer......	3,650 28		
			$ 3,650 28	
1882–83.	From State Treasurer......	28,802 50		
			$28,852 50	
				$94,579 77

DISBURSEMENTS.

1879–80.	Paid for buildings.........	62,126 99		
			$62,126 99	
1881–82.	Paid for buildings.........	3,650 28		
			$ 3,650 28	
1882–83.	Paid for buildings.........	28,827 10		
			$28,827 10	
				$94,604 37
Dec. 1.	To balance..			$ 24 60

Salaries.

RECEIPTS.

1880–81.	From State Treasurer......	13,481 97		
			$13,481 97	
1881–82.	From State Treasurer......	18,484 20		
			$18,484 20	
1882–83.	From State Treasurer......	26,782 81		
			$26,782 81	
				$58,748 98

DISBURSEMENTS

1880–81.	Paid officers and Professors,	13,481 97		
			$13,481 97	
1881–82.	Paid officers and Professors,	18,484 20		
			$18,484 20	
1882–83.	Paid officers and Professors,	26,782 81		
			$26,782 81	
				$58,748 98

College.

RECEIPTS.

1879.	From State Treasurer......	6,255 49		
	From subscriptions.........	73 73		
			$ 6,329 22	
1880–81.	From State Treasurer......	5,092 14		
	From matriculations.......	1,705 00		
	From sale books, furniture,	1,670 76		
	From Gen. George.........	50 00		
			$ 8,517 90	
1881–82.	From State Treasurer......	2,236 43		
	From matriculations.......	770 00		
	From sale books, furniture,	334 20		
			$ 3,340 63	
1882-83.	From State Treasurer......	4,720 54		
	From matriculations.......	1,450 00		
	From subscriptions.........	103 33		
			$ 6,273 87	
				$24,461 62

DISBURSEMENTS.

1879.	Paid for equipment........	4,299 30		
	Paid for cisterns...........	106 75		
	Paid for incidentals........	1,924 44		
			$ 6,330 49	
1880–81.	Paid for equipment........	6,304 37		
	Paid for incidentals........	818 21		
	Paid for printing..........	153 90		
	Paid for military..........	517 82		

			$ 7,794 30	
1881-82.	Paid for equipment.... ...	299 22		
	Pid for incidentals.........	2,160 68		
	Paid for cisterns...........	195 18		
	Paid for printing..........	61 00		
	Paid for repairs...........	1,105 68		
			$ 3,821 76	
1882-83.	Paid for incidentals........	1,846 95		
	Paid for equipment........	1,826 99		
	Paid for cisterns...........	342 87		
	Paid for printing..........	465 10		
	Paid for repairs...........	1,066 90		
	Paid for postage & station'y,	184 74		
	Paid for improving grounds,	275 35		
			$ 6,008 90	
				$23,955 45
Dec. 1.	By balance..			$ 506 17

Farm.

RECEIPTS.

1880-81.	From State Treasurer.....	$ 8,824 00		
	From Subscriptions.......	664 23		
	From Sale of Produce.....	1,014 16		
			$10,502 39	
1881-82.	From State Treasurer.....	8,421 75		
	From sale milk and beef...	617 92		
	From sale field crops......	328 01		
			9,367 68	
1882-83.	From State Treasurer.....	15,645 26		
	From sale milk and beef...	3,612 27		
	From sale field crops......	967 95		
			20,225 48	
				$40,095 55

DISBURSEMENTS.

1880-81.	Paid for seeds............	$ 822 71		
	Paid for permanant improvements...........	422 23		
	Paid for implements and machinery............	1,527 14		
	Paid for stock............	1,386 60		
	Paid for fertilizers	471 26		
	Paid for fences...........	1,274 00		
	Paid for labor............	2,412 51		
	Paid for teams...........	1,756 52		
	Paid for office............	19 48		
			$10,092 45	
1881-82.	Paid for seeds............	485 37		
	Paid for permanent improvements...........	1,171 94		
	Paid for implements and machinery............	895 80		
	Paid for stock............	965 00		
	Paid for fertilizers........	727 80		
	Paid for fences...........	592 55		
	Paid for labor............	1,767 89		
	Paid for teams...........	86 89		
	Paid for drainage.........	202 90		
	Paid for field crops.......	23 50		
	Paid for office............	36 18		
	Paid for miscellaneous....	63 97		
			7,019 79	

1882–83.	Paid for seeds	444 21		
	Paid for permanent improvements	2,951 97		
	Paid for implements and machinery	3,020 01		
	Paid for stock	8,785 45		
	Paid for fertilizers	10 60		
	Paid for fences	1,155 70		
	Paid for labor	4,355 57		
	Paid for student labor	418 35		
	Paid for teams	768 50		
	Paid for field crops	132 00		
	Paid for dairy	505 31		
	Paid for land rent	175 00		
	Paid for Silo	42 17		
	Paid for experiments	17 19		
	Paid for miscellaneous	102 79		
	Paid for office	46 30		
			22,931 12	
				40,043 36
Dec. 1.	By balance			$ 52 19

Horticulture.

RECEIPTS.

1881–82.	From State Treasurer	$ 474 54		
	From sale vegetables	76 40		
			$ 550 94	
1882–83.	From State Treasurer	3,646 44		
	From sale vegetables	830 73		
			4,477 17	
				$ 5,028 11

DISBURSEMENTS.

1881–82.	Paid for labor	$ 36 50		
	Paid for fertilizers	31 00		
	Paid for garden	1 75		
	Paid for seeds	171 62		
	Paid for office	6 35		
	Paid for implements	16 80		
	Paid for Nursery stock	113 27		
			377 29	
1882–83.	Paid for labor	947 60		
	Paid for stock	865 58		
	Paid for fertilizers	325 60		
	Paid for garden	41 34		
	Paid for office	20 58		
	Paid for seeds	218 47		
	Paid for implements	431 68		
	Paid for permanent improvements	459 32		
	Paid for Nursery stock	1,035 16		
	Paid for miscellaneous	56 83		
			4,402 16	
				4,779 45
Dec. 1	By balance			$ 248 66

Chemical.

RECEIPTS.

1880–81.	From State Treasurer	$ 1,990 00	
	From students—chemicals	136 44	
			$ 2,126 44

1881–82.	From State Treaserer.....	444 13		
	From students—chemicals.	260 65		
			704 78	
1882–83.	From State Treasurer.....	1,705 87		
	From students—chemicals.	351 25		
	Fees for analysis..........	1,048 00		
			3,105 12	
				$ 5,936 34

DISBURSEMENTS.

1880–81.	Paid for apparatus........	1,639 94		
	Paid for chemicals........	529 72		
			2,169 66	
1881–82.	Paid for apparatus........	294 88		
	Paid for chemicals........	366 68		
			661 56	
1882–83.	Paid for apparatus........	1,825 45		
	Paid for chemicals........	942 70		
	Paid for incidentals.......	332 78		
			3,100 93	
				5,932 15
Dec. 1.	By balance....................................			$ 4 19

Student Labor.

RECEIPTS.

1880–81.	From State Treasurer......	$ 5,425 00		
			$ 5,425 00	
1881–82.	From State Treasurer......	4,392 45		
	From farm department....	232 81		
			4,625 26	
1882–83.	From State Treasurer......	6,417 83		
			6,417 83	
				$16,468 09

DISBURSEMENTS.

1880–81.	Paid students.............	5,442 29		
			5,442 29	
1881–82.	Paid students	4,607 97		
			4,607 97	
1882–83.	Paid students	6,417 83		
			6,417 83	
				$16,468 09

Library.

RECEIPTS.

1882–83.	From State Treasurer......	$ 2,500 00		
			$ 2,500 00	

DISBURSEMENTS.

1882–83.	Paid for books...........	1,844 46		
			1,844 46	
Dec. 1.	By balance			$ 655 54

Biology.

RECEIPTS.

1882–83.	From State Treasurer......	$ 1,879 00		
			$ 1,879 00	

DISBURSEMENTS.

1882–83.	Paid for equipment.......	1,864 56		
			1,864 56	
Dec. 1.	By balance..................................			$ 14 44

Coal.

RECEIPTS.

1881–82.	From State Treasurer,.....	$ 900 00		
	From sundries for coal....	1,028 15		
			$ 1,928 15	
1882–83.	From sundries for coal...	4,892 97		
			1,892 97	
				$ 3,821 12

DISBURSEMENTS.

1881–82.	Paid for coal.............	1,193 62		
			1,193 62	
1882–83.	Paid for coal.............	3,030 67		
			3,030 67	
				4,224 29
Dec. 1.	To balance....................................			403 17

Hospital.

RECEIPTS.

1882–83.	From State Treasurer.....................	$367 78	
			$367 78

DISBURSEMENTS.

1882–83.	Paid for equipment.......................	367 78	
			367 78

Entomology.

RECEIPTS.

1882–83.	From State Treasurer.....................	$195 01	
			$195 01

DISBURSEMENTS.

1882–83.	Paid for equipment.......................	195 01	
			195 01

DEPARTMENT OF BIOLOGY.

To President S. D. Lee:

SIR—In obedience to authority, this Report on the Department of Biology is presented:

I. *Botany.*—Although the College has been in operation but three years, four classes have been instructed in Botany: 1. Structural or Organic; 2. Physiological; 3. Systematic; 4. Phytology, or Descriptive. These divisions of Botany, are by the curriculum placed in the Freshman Class. But as we commenced the first session with a Freshman and also a Sophomore Class that had not studied these subjects, both these classes were instructed in Botany. The two subsequent Freshman Classes have, of course, received instruction in regular order as provided in the Curriculum. The first Sophomore class became last session the first Senior Class and was instructed in Histological Botany with the assistance of the best working compound microscopes. Much of the work done was in superior style and portions preserved on slides and others in beautifully executed drawings. In addition to the appliances provided in our best Colleges, every student has been required to collect, handle, analyse, dissect and describe the living plants; about 120 to 150 such analyses being made by each

Freshman Class; and a large number of sectional and other objects prepared and examined by the Senior Class; besides infusorial and other organisms in water, food, and pollen, and spore fertilization was also successfully studied.

II. *Anatomy* has been taught to each Junior Class by lectures on articulated and unarticulated human and other mammallian skeletons, life size plates, and dissections, as fully as could be done in the limited time assigned to this study.

III. *Physiology.*—To economize time, the Physiology and Hygiene of organs has been taught in conjunction with their Anatomy, only three months being allowed for the combined course of lectures; while in special schools, from nine to fifteen months are not considered too long a time to devote to each of these studies.

IV. *Veterinary Science.*—This also is taught in the Junior Class for a term of thirteen weeks, by lectures illustrated by skeletons, and other prepared parts of domestic animals, plates, the living animals in health and disease, dissections and post mortem examinations.

Lectures are given also on the selection of breeding and other animals for special purposes, the principles of breeding and improving live stock, their management and treatment in health and disease. This division in the special schools is never divided into less than five chairs, and in some of the Colleges into fifteen chairs, each giving a nine months course of lectures. The classes instructed in the College in Veterinary Science have been unanimous and very earnest in expressions of their wishes that this course should be prolonged through an entire session. They seem to think that nothing else in the curriculum would be so valuable to them.

V. *Zoology.*—In the Senior Class twelve weeks are given to lectures on this subject, with much material for illustration.

VI. *Geology.*—One term is given the Senior Class in this study also, in its history and application to Architectecture, Manufactures, Sciences, Arts, etc. It is taught by lectures with illustrations by meansof plates, maps, minerals, rocks, soils, fossils, etc., in large numbers.

Means of Illustration.—During the first two sessions, the College furnished nothing to this Department except Blackboards. My own collections furnished means of rendering instruction much more satisfactory than it could have been otherwise. The donations and appropriation of the last Legislature were partly utilized during the third session in obtaining microscopes and other implements and many thousand specimens in geology, botany, anatomy, etc,, with many valuable books. This session (the fourth) still farther additions have been made to our means of illustration and facilities for investigation and instruction.

Some of our appliances have not yet been brought into use for want of suitable receptacles for their accommodation. The necessary additional cabinets are in process of construction and are expected to be completed during the next month. In a few days the additional supply of glass ware manufactured specially for preserving wet specimens will be in place to receive preparations already made here, and others that we may collect and make from time to time. An arrangement has been made with the Smithsonian Institute, (by furnishing the necessary alcohol and glass,) by which that Institution will donate to the College a series of Marine Invertebrates.

Another arrangement has been made with the Department of Agriculture at Washington, under which the Botanist of the Department, Dr. Vasey, will send as a donation to the College, specimens of all the grasses of the United States of which the Department has duplicates. The known species growing in the United States number about 600. It is not probable that the Agricultural Department can furnish duplicates of all these. We have on hand several hundred species, mostly collected by myself, but many purchased and a few sent to me for identification. I have collected a great number of other species of plants that grow in Mississippi that furnish food, forage, medicines, poisons, dyes, fibres and other products useful in manufactures and arts, besides many that are useless, noxious, pests, etc.

Other Outside Work.—I have been obliged to spend more time in teaching farmers and others all over the State—many States in fact—than in the lecture room.

Many of the hundreds of letters of inquiry received require many hours of careful investigation in addition to the time consumed in writing replies. During the last session an assistant was occupied several hours a day in making these investigations under my oversight, and often then we could not keep pace with the tide of inquiries. Many of these calls were answered by sending out the Farmer's Book of Grasses, and many others were answered through the public prints. It is believed that farmers have been benefited many tens of thousands of dollars by the information so imparted, if we may credit their statements, and we have no reason to doubt them. This work has, at times, been almost an intolerable burden.

Animal Diseases.—During the last summer, I had the opportunity of making post mortem examination of animals. By means of the knowledge so acquired it becomes indubitably certain that the pathology of the so-called Red or Black water of Europe and America is totally different from that found in the very fatal and wide-spread malady among cattle in the Gulf States that has prevailed for the last three months. Of course the two conditions should have very different treatments. It is farther believed that a certain effective remedy has been devised for the cure of acclimating fever, that will be worth hundreds of thousands of dollars to stock-breeders in the Southern States. Properly conducted experiments, for which the State should furnish means, will result in the production of prophylactics, the use of which will prevent he occurrence of any case of acclimating fever, hæmaturic fever, or yellow chills, to which cattle are liable. A number of cases of these diseases have occurred among the imported cattle of the College, of the Devon, Hereford, and Holstein breeds. Those treated before disorganization of blood occurred all recovered rapidly—some from conditions considered beyond remedy.

Respectfully submitted by your obedient servant,

D. L. PHARES.

REPORT OF FARM DEPARTMENT.

Gen. S. D. Lee, President A. & M. College:

SIR—The following report of the work and expenditures of the Farm Department of the College from October 5th, 1880, to December 1st, 1883, is respectfully presented.

The work of this department embraces instruction in the class room, student labor and the general management of the farm.

Instruction in Agriculture is given by lectures, divided into three courses, occupying the entire College year.

SENIOR CLASS—First term. Farm economy, principles of stock-feeding, nutritive ration, value of different foods and manures, preparation and application of manures and fertilizers, composting, green manuring, adaptation of soils to crops, special crops, rotation of crops, cultivation, planning and erecting farm buildings.

FRESHMAN CLASS—Second term. History, characteristics, breeding and care of the breeds of domestic animals; dairying, making and shipping milk, butter and cheese.

SOPHOMORE CLASS—Third term. Principles of drainage, effect of an excess of soil water on cultivation, surface and subsoil drains, contamination of wells and cisterns, laying tiles and sewers, hill-side ditching, controlling streams, preventing soils from washing, use and care of farm implements and machinery, with field practice.

Instruction in the department of Agriculture embraces not only the lecture of the class-room, but the knowledge gained by the student in the regular work of the field and in intimate association, during his whole course, with a large and well-equipped farm.

The department is under the immediate supervision of the professor in charge, which affords opportunities to illustrate the theories of the class-room in actual practice.

The compulsory student labor system is made a prominent feature, and is considered educational, not only in teaching the student how to do certain things. but also in making him familiar with the various industrial operations of the institution and interested in them.

The College owns 1,940 acres of land, divided into cultivated fields, pastures, orchards, ornamental grounds, etc.

A considerable portion of the farm is cultivated with special reference to providing labor for the student that will be instructive.

The larger part of the farm is devoted to the production of commercial products; on the farm proper, the general crops of a diversified system of husbandry, including stock-growing and dairying.

In somewhat similar colleges, even where student labor is required, it is deemed sufficient to furnish just enough labor to employ the student during a limited part of the course, having simply specimen farms, gardens, herds, etc.

The College provides for the student not merely experimental and ornamental work, but a business farm, garden and nursery. Instead of specimen crops on a small scale, that the student can only see, he helps to cultivate crops that vary in extent from ten to one hundred and fifty or more acres.

To illustrate the variety of breeds, one or two animals of a kind are not considered sufficient; a herd is provided, enabling the student to become familiar with the work of caring for several hundred animals, as well as to study the peculiarities of the various breeds. A dairy of nearly one hundred cows is being organized, that the student may study that branch of agriculture from a business standpoint.

Opportunity is given for the student to compare the "theory" of agriculture with the "practice," and he soon becomes an interested critic, and is enabled to judge with considerable accuracy as to the value of the principles taught in relation to the art.

In assuming the duties of my position, October 1, 1880, I found the department in possession of 840 acres of land, three-fourths of which had been thrown out as not being worth longer cultivation. The land was destitute of buildings, fences, ditches, the bottoms grown up with small trees and brush, and all more or less cut up by gullies. Owing to continued wet weather during the winter of 1880–1 and the unavoidable delay in procuring lumber for buildings or fences, but little work was accomplished before spring.

The student labor system was organized as soon as the students moved into the dormitory. This novel feature of our Institution, which has failed in nearly every college where it has been tried, has been a success with us from the beginning.

With the exception of a small minority of the students, no disposition has been shown to avoid labor. Students have worked willingly, and, as a rule, diligently, many of them being employed more than the required number of hours.

For all regular labor students are compensated, the maximum rate being eight cents per hour.

Soon after the organization of the labor system, I commenced appointing certain students to act as foreman, to take charge of squads of students while at work. Each student foreman carries a time-book in which he sets down the number of hours each man in his detail labors every day, and also marks the standing or value of the work performed, on a scale of ten, as in class recitation. The number of hours and marks are recorded in the farm books daily, and at the close of the month a statement is made out, the rate of wages per hour determined by the grade marks and presented to the Secretary of the College to be credited on student's board account.

It is the design of the department to have students do all of the work of the farm, including the erection of farm buildings, that can be done without interfering with the regular studies.

Students attend classes in the forenoon and work in the afternoon. To enable the department to keep its teams constantly employed, men are employed as teamsters.

Men have been hired to dig some of the ditches on the wetter portions of the farm, occasionally to hurry up the harvesting of a crop to prevent loss, and to build fences that were two miles and more from the buildings, also during vacation when students were absent. With these exceptions, the farm is carried on by student labor.

The original farm of 840 acres was increased by the purchase of some 844 acres in 1882, to afford room for the full development of the agricultural and industrial feature of the College.

To enable the students to become familiar with diversified farming, it was thought best to equip a large farm and illustrate in a business way the work of growing and preparing food for stock-growing, dairying, the breeding and raising of the several breeds of stock, cultivation of crops by improved machinery, etc., employing students in various ways to make them familiar with the general plan and details of all the work.

Successful farming at present means the use of machinery wherever possible to the exclusion of hand labor, hence the necessity of a large farm and expensive equipment to illustrate diversified agriculture, carry on a practical business farm and furnish profitable employment for a large number of students.

It has been the aim of the department to place the farm under a high state of cultivation as soon as possible and develop the stock-growing feature, looking to the future for returns rather than to attempt to show immediate profits. Instead of cropping only the best spots of land, whole fields are ditched, grubbed out clean, levelled up and cultivated to prepare the land for the use of the larger implements. This system, in direct opposition to the plan that has rendered almost barren what were once our fertile lands, is believed to be the only economical one, and one with which our students should become familiar.

Our work so far has been a work of preparation, the crops grown being considered incidental and planted and worked to bring the land into good cultivation more than to produce crops.

Commodious buildings have been erected and an extensive outfit of machinery procured, more, perhaps, than would be considered necessary on a private farm, to illustrate several methods of caring for stock, planting, cultivating, harvesting and feeding crops, and to attract and interest students.

The success of an agricultural college being determined to a great extent by the number or proportion of its students that become farmers, the farm department is endeavoring to make the intimate association with a well equipped farm, fine breed stock, physical as well as mental labor, so attractive that students will choose farming for a business in preference to the so-called learned professions.

I present a classified statement of the work of the farm showing how students, men and mules have been employed. We are not prepared as yet to show cost of growing a certain crop, or of the production of a definite amount of milk or beef, our crops being irregular and our stock fed simply to grow and increase until we could arrange regular fields and crops and adopt a system of weighing and measuring every crop harvested and keep an accurate account of all food consumed and the resulting product.

Our growth has been so rapid that it has been a constant effort to provide enclosures, food and shelter for our animals. What other colleges have attempted in ten years we have been compelled to do in three, to say nothing of renovating a large tract of neglected and partially exhausted land.

CLASSIFICATION OF LABOR.

PERMANENT IMPROVEMENTS.

Number of days labor, students, men and mules, grounds, grading, clearing drives, walks, etc.

	STUDENTS.	MEN.	MULES.
1880–'81	961.	85.	157.3
1881–'82	621.4	160.1	182.9
1882–'83	29.6	18.6	26.
Total	1612.0	263.7	366.2

COLLEGE.

Hauling lumber, brick, furniture, repairs, building.

	STUDENTS.	MEN.	MULES.
1880–'81	975.7	78.9	188.4
1881–'82	171.3	20.	40.4
1882–'83	27.5	114.5	196.6
Total	1174.5	213.4	425.4

PERMANENT IMPROVEMENTS.

Ditching, clearing land, grading, digging pools, etc.

	STUDENTS.	MEN.	MULES.
1880–'81	1495.9	519.	655.2
1881–'82	1110.5	157.	270.9
1882–'83	1133.1	183.4	203.4
Total	3739.5	859.4	1129.5

FENCES.

Hauling lumber, building and repairing.

	STUDENTS.	MEN.	MULES.
1880–'81	562.7	102.9	164.2
1881–'82	413.7	29.6	54.2
1882–'83	345.4	99.5	155.5
Total	1321.8	331.0	373.9

BUILDINGS.

Hauling lumber, building and repairs.

	STUDENTS.	MEN.	MULES.
1880–'81	265.2	97.	127.8
1881–'82	49.2	3.8	3.9
1882–'83	542.	119.6	208.8
Total	856.4	220.4	340.5

PUBLIC ROAD WORK.

Labor on Roads.

	STUDENTS.	MEN.	MULES.
1880–'81	12.	8.	16.
1881–'82	14.	12.	24.
1882–'83	6.5	10.	30.
Total	32.5	30.	70.
1883. Planting trees	10.3	5.	11.5

OFFICE.

Keeping books, writing.

	STUDENTS.	MEN.	MULES.
1880–'81	11.8		
1881–'82	7.5		
1882–'83	10.		
Total	29.3		
CHEMICAL DEPARTMENT.			
1880. Hauling goods	....	1.	1.8

MESS HALL.

Cleaning up around Dormitory, hauling supplies.

	STUDENTS.	MEN.	MULES.
1880–'81	22.1	30.4	53.7
1881–'82	1.5	3.7	5.7
1882–'83	.....	59.	75.5
Total	23.6	93.1	134.9

GARDEN—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	289.	76.7	136.1
1881–'82	285.9	54.5	95.1
Total	574.9	131.2	231.2
TEAMS.			
1880–'81. Moving feed, etc	2.2	2.9	6.5

LABOR.

Moving families, hauling wood-work at Farm House.

	STUDENTS.	MEN.	MULES.
1880–'81	7.7	7.7	12.4
1881–'82	10.6	6.	13.
1882–'83	5.6	29.5	39.
Total	23.9	43.2	64.4

IMPLEMENTS AND MACHINERY.

Care of, repairs and painting.

	STUDENTS.	MEN.	MULES.
1880–'81	81.3	....	....
1881–'82	48.9	5.	2.
1882–'83	65.6	3.5	1.
Total	195.8	8.5	3.

STOCK.

Care of preparing feed, milking, etc.

	STUDENTS.	MEN.	MULES.
1880–'81	354.4	35.1	68.9
1881–'82	554.8	208.5	151.4
1882–'83	613 4	312.	332.4
Total	1522.6	555.6	552.4

FARM CROPS—DAYS.

OATS—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	61.2	105.9	245.2
1881–'82	186.5	115.5	363.1
1882–'83	74.4	396.	552.5
Total	322.1	717.4	1160.8

SUGAR-CANE AND SORGHUM—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	64.	34.6	27.9
1881–'82	241.8	120.8	143.5
1882–'83	166.4	218.1	252.5
Total	472.2	373.5	423.9

CORN—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	300.	120.6	288.
1881–'82	394.1	170.6	278.
1882–'83	234.3	259.9	417.
Total	928.4	551.1	983.

PEAS—LABOR.

	STUDENTS	MEN.	MULES.
1880–'81	198.5	42.3	66.
1881–'82	105.8	123.4	234.1
1882–'83	7.9	34.8	74.
Total	312.2	200.5	374.1

MILLET—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	4.5	19.7	19.6
1881–'82	6.2	38.9	78.7
1882–'83	7.3	35.	81.
Total	18.0	93.6	179.3

HAY AND FODDER—PREPARING GROUND, SOWING SEED., ETC.

	STUDENTS.	MEN.	MULES.
1880–'81	111.8	90.4	81.3
1881–'82	26.0	110.4	157.3
1882–'83	34.9	147.	355.5
Total	172.7	347.8	594.1

COTTON—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	101.7	62.4	91.3
1881–'82	64.5	15.6	19.5
1882–'83	8.5	5.5	6.3
Total	174.7	83.5	117.1

EXPERIMENTS—LABOR.

	STUDENTS.	MEN.	MULES.
1880–'81	15.5	1.8	3.6
1881–'82	8.5	19.8	25.3
1882–'83	4.5	5.5	4.5
Total	28.0	27.1	33.4

SUMMARY OF LABOR CLASSIFICATION.

PERMANENT IMPROVEMENTS—NUMBER OF DAYS LABOR.

	STUDENTS.	MEN.	MULES.
	8,747.0	9,622.7	2,717.
Stock	1,522.6	555.6	552.4
Farm Crop	2,428.3	2,295.5	3,865.0
Miscellaneous	849.7	279.9	341.8
Total	13,547.6	12,753.7	7,476.2

Inventory of Farm Property.

PERMANENT IMPROVEMENTS.

Barn, silo and engine house	$ 2,500 00	
Horse and mule barn	350 00	
Stock shed	50 00	
Pig pen, $50 ; 2 corn cribs, $70	120 00	
Farm house and cistern	1,500 00	
Dairy	500 00	
Drain tile	175 00	
Twenty miles wire, board and rail fence	2,500 00	
		$ 7,695 00

MACHINERY AND IMPLEMENTS.

Engine, 15 horse-power, and conductor	1,250 00	
Cane mill and evaporator	400 00	
Grain and seed thresher	450 00	
Ensilage cutter	140 00	
Two feed mills	140 00	
Flouring mill	40 00	
Corn sheller	25 00	
One wagon and four platform scales	175 00	
One reaper and mower	100 00	
One mower	50 00	
One Champion grain drill and planter	140 00	
One spring tooth drill and cultivator	50 00	
One Pennock's road and ditch machine	100 00	
One Kemp's manure spreader	100 00	
Four Thomas and spring tooth harrows	75 00	
One sulky plow	40 00	
Three three-horse walking plows	40 00	
Four two-horse plows	40 00	
Plow repairs	15 00	
Five five-tooth cultivators	40 00	
Six two-tooth caltivators	24 00	
One sulky cultivator	25 00	
Six one-horse plows	20 00	
Other plows	20 00	
Field roller	20 00	
Two scrapers	14 00	
One lumber wagon	60 00	
Three wagons	120 00	
Two carts	50 00	
Two saddles	8 00	
		3,771 00

STOCK.

Five head Holsteins, bull and four cows	1,600 00	
Three head Herefords, bull and two cows	1,200 00	
Three head Galloway's, bull and two cows	800 00	
Three head Devons, bull and two cows	350 00	
One shorthorn cow	50 00	
Two Devon calves	150 00	
Three Holstein calves, one heifer and two bulls	750 00	
Ninety-four native cows @$20	1,880 00	
Two two-year-old steers	40 00	
Forty-one yearlings @$12	492 00	
Twenty-two calves @$7 50	165 00	
Fourteen grade Jersey heifers	420 00	
Two grade Galloway heifers	30 00	
Four grade Shorthorn steers	28 00	
Four grade Shorthorn heifers	60 00	
Four grade Galloway steers	28 00	
One grade Galloway heifer calf	15 00	
Two grade Holstein steer calves	10 00	
One grade Holstein heifer calf	25 00	
Ten grade Jersey heifer calves	250 00	
Six native heifer calves	18 00	
		8,361 00
One Berkshire boar	25 00	
One Berkshire sow, $40 ; five sows, $75	115 00	
Three Essex hogs	60 00	
Four Essex pigs	20 00	
Five grade Berkshire sows	75 00	
Ninety pigs, all sizes	360 00	
		655 00
Fourteen mules	2,100 00	
Two horses	225 00	
		2,325 00

PRODUCE.

800 bushels corn	400 00	
10 tons hay	100 00	

GROWING CROPS.

100 acres corn	1,000 00	
100 acres oats	1,000 00	
17 acres sorghum	255 00	
8 acres sugar cane	500 00	
15 acres peas	225 00	
20 acres millet	400 00	
8 acres fodder corn	160 00	
8 acres shuck corn	80 00	
		4,120 00
1 ton fertilizers	35 00	
200 bushels cotton seed	25 00	
		60 00

Summary.

Permanent improvements	$ 7,695 00	
Machinery and implements	3,771 00	
Stock—Cattle	8,361 00	
Hogs	655 00	
Horses and mules	2,325 00	
Produce and crops	4,120 00	
Miscellaneous	60	
		$26,987 00

Stock purchased since inventory was taken—Four Holsteins and ten Devons		2,500 00
		$29,487 00
Total expenditure—See Secretary's report	$40,043 36	
By receipt sales		$ 6,540 31
By inventory property accumulated		29,487 00
Balance		4,016 05
	$40,043 36	$40,043 36

To offset the deficit, or balance between expenditures and property on hand and receipts, we have the increased valuation of the land, besides having brought it into available condition to make future returns.

The committee appointed to appraise the College property placed the valuation of the land at $33,087 50. The land cost when purchased, $18,038 38, making an increase in value of $15,049 12. The increase in value is real; no more land equal in value to the College lands in their present condition, and in contact with these lands, can be bought for $15 per acre.

A part of this rise in value is due to changes in the times, but a very large portion is due simply to increased productive value.

In the classification of labor it will be noticed that permanent improvements have absorbed a very large amount of the labor.

The College farm will in the future be self-sustaining and pay for its student labor besides. Student labor is not profitable to the farm in a pecuniary sense; the same amount of work can be bought cheaper. The expense should properly be classed with salaries of Professors, for its advantages are educational and somewhat costly. The College herds of stock will return profits from this time on. Without some unforeseen calamity, all money invested in pure bred stock by the College will make an annual return of twenty-five per cent. and over above expenses.

Experiments.

The farm department makes no claims as an experimental station. The work of organizing and getting in shape for economical labor has absorbed the entire time and energies of the Superintendent and his assistants. We have, however, begun a series of experiments to determine the feeding value of cotton seed and its products, the cheapest and most permanent plan of renewing the fertility of our worn-out lands, the most desirable forage crops for our climate, the grasses best suited to our soils and best method of securing a stand of the same.

Believing that the present lack of fertility or productiveness of our exhausted soils is due largely to lack of organic matter and improper mechanical condition, our investigations and tests are in the line of recuperative crops, such as the cow pea, clover, grasses, rotation of crops, drainage, thorough cultivation and a moderate application of manures and fertilizers. We have not followed the usual plan of testing certain fertilizers on small plots of ground, and have, therefore, no tables of astonishing results to present. We are working on larger areas, and on land that would not produce profitable crops. Some time is required to give definite results. The production of certain fields has been increased over fifty per cent. without the use of any manures. A number of varieties of grasses and forage crops have been planted the present year to determine their value.

We have made ordinary steers gain in live weight an average of four and one-half pounds per day for sixty days, on an average daily ration of thirteen pounds of cotton seed cooked and ten pounds of dry hay and straw; or at $10 per ton for the forage and 12½ cents per bushel for seed, an average daily cost of about ten cents per head per day. Fifty head of dry cows, and calves nearly one year old, have been kept in good condition on an average daily ration of six pounds of seed and six pounds of hay through the winter months; milch cows consuming about twenty-five per cent. more. We are making experiments to determine the comparative value of cotton seed, cotton seed meal and corn for feeding purposes. The results of these tests will be published in full in due time. We are nearly ready to commence experiments in the dairy line, to determine questions of food, temperature, manipulation of milk, etc. Special funds, outside of the regular College appropriations, are needed to carry on this work in a satisfactory manner.

Respectfully submitted,
F. A. GULLEY,
Prof. of Agriculture and Supt. of Farm.

DEPARTMENT OF HORTICULTURE AND ENTOMOLOGY.

Gen. S. D. Lee, President of A. and M. College of Mississippi:

DEAR SIR: Complying with your request, I will write a short synopsis of the work done in the departments of Horticulture and Entomology since my connection with the College.

The eastern part of the College lands, containing about eighty acres, on which stand the College buildings, President's and Professrs' houses, has been assigned by the Board of Trustees to the Horticultural Department.

After much ditching, clearing the land of roots and stumps and filling gullies, these grounds contain now:

1st. The fields for the purpose of furnishing vegetables to the Steward's Department and officers connected with the College.

2d. Orchards containing fourteen hundred and fifty six apple trees, three hundred peach trees, four hundred pear trees, five hundred mulberry trees, fifty plum trees and three hundred and fifty grape vines.

The large holes in which the trees were planted had to be enriched to give the trees a vigorous start, and it is my opinion that these red clay hills are well adapted for orchards and vineyards. Fallen fruits are cheap and healthy food for hogs, and sound fruits, if not sold fresh, can, by means of the improved evaporator, be made a marketable product. This latter industry and the canning of fruits and vegetables I earnestly recommend, and I hope that means will be furnished to purchase the necessary machinery.

3d. We have also over four acres planted with the best varieties of strawberry plants. Last season the Steward's Department was furnished with strawberries at eight cents per quart; this season we hope to furnish the berries at six cents per quart.

4th. The Nursery has over 25,000 marketable fruit trees and grape vines, and over 15,000 smaller sized trees, to be held over for another season. Though we had an unprecedented dry summer, the largest portion of the stock is of fine size and well grown. The object in establishing the Nursery is to give the students a thorough training in fruit culture and the nursery business, and also to furnish the people of the State with the best trees and plants at reasonable prices.

I had also started an experimental garden, for the purpose of determining the values of new and old fruits and vegetables; but a continued four months drought caused the experiments to be only partially successful.

All the work to effect the results enumerated above was done by student labor; and let me state here, that the student labor in my department has steadily improved in quality since my connection with the department; and though we cannot expect to make student labor pay, as far as all its results in the garden and orchard are concerned, in grafting, propagating plants, and work requiring skill in the nurseries and orchards, student labor has been made profitable.

I will here append my report from the Catalogue of 1882-83, under the heading. "Department of Horticulture and Entomology:"

The students of the Junior class are thoroughly instructed in the management of the family and market garden, so that they are enabled to make market gardening their future business. A short time is also set apart for Pomology. Instruction is also given in the general management of the Nursery business, which includes the propagation of trees and vines from seeds, layers and cuttings, and by grafting and budding. The Horticultural Department is in fair running order. We intend to make it occupy that prominent position among industries which other States of the Union have already conceded to it, and we ask the hearty cooperation of Horticulturists of our State.

We are now laying off the grounds around the College buildings, and will ornament them as far as our very limited means will reach; but I hope that a sum of $2000 will be appropriated to execute the design as far as that money will reach. These grounds would thus become an object of interest and instruction to students and visitors. Thus far our A. and M. College has already an enviable reputation far beyond the limits of our State; let us continue the good work, and by ornamenting its grounds and by adding to its improvements make it take first rank among the Colleges. I am only expressing views as far as my department is concerned; and what I mean by other improvements is the addition of a propagating or glass-house, which I consider a necessary adjunct to the Department. I mean to continue the planting of orchards and vineyards, to establish an experimental garden and orchard, etc.

I have no doubt that the Department of Horticulture can be made self-sustaining, and that it will pay a handsome profit if our nurseries will receive a reasonable patronage from the people of our State.

I was elected Professor of Horticulture and Entomology by the Board of Trustees at the July meeting of 1882, but had charge of the vegetable garden and lectured during four months of the previous session.

The report of the Secretary and Treasurer will show the financial standing of my Department.

All of which is respectfully submitted.

J. J. COLMANT,
Prof. of Horticulture and Entomology.

REPORT OF THE PROFESSOR OF CHEMISTRY AND PHYSICS.

To the President and Board of Trustees A. and M. College of Missisippi:

DECEMBER 1, 1883.

GENTLEMEN: It is not possible for me in making this, my first annual report, to begin with the commencement of the work done in this Department. It was begun under the direction of another, whom I never had the pleasure of meeting, and of whom I know nothing, except that he left behind him the best evidences of his high attainments, good judgment and great energy After the death of Professor Kedzie, my predecessor, in February, 1882, work was seriously interrupted, and such provisions as were possible were made until I took charge of the department in the following September. Upon my arrival I immediately went to work to giving everything in the Laboratory a general overhauling, correcting disorder, and, as far as possible, endeavored to get the Department organized. Extensive additions, especially in chemical glass and porcelain ware, together with new apparatus and chemicals, were made. By means of the liberal appropriation placed at our disposal we were able, in a very short time, to get into fair working order. In March, 1883, we moved into the new Chemical Laboratory, a building of stately proportions, which is provided with water, gas and approved modern conveniences. We have arranged work tables for about fifty students, most of which have been occupied, and expect to extend accommodations as fast as the demands are made upon us. In addition to all the modern improvements, the laboratory is well provided with glass, porcelain, platinum and other apparatus, so as to be ready to make any analysis that is likely to be sent in to us. At present we have no apparatus for assaying, but should the demand for this kind of work be made upon us, it can be had. Our laboratory is well equipped, and there are few institutions in the South, or anywhere else in the country, that offer better facilities for acquiring a knowledge of chemistry than we now have here. The apparatus has been carefully selected, under the determination of the Board to give the industrial classes of Mississippi as good facilities for acquiring a liberal education as are afforded anywhere in the country. The chemical apparatus is of the best quality and of the latest construction, and we do not hesitate to say that we are proud of the development and progress made by the Department during the past year. So far as we are aware, there has not been a single institution in the South, if we except the University of Texas, with its unknown wealth, in which the Department of Chemistry has developed as much in the same time as it has here. The greater portion of the instruction has been by lectures or practical work in the laboratory. It is as follows:

First Term, Senior Class: Lectures, Meteorology and Climatology.

First Term, Sophomore Class: Lectures, Elementary Chemistry.
Second Term, Junior Class: Lectures, Agricultural Chemistry.
Second Term, Sophomore Class: Practical Work in Laboratory.
Second Term, Freshman Class: Text-book, Physics.
Third Term, Junior Class: Lectures and Text-Book, Chemical Physics.

Third Term, Sophomore Class: Practical Work in Laboratory.

All recitations five hours a week, except practical work in laboratory, which is ten hours per week. There were about one hundred and fifty students who received instruction in this Department last year.

The students under my instruction have been enthusiastic and industrious as a rule, and have made most excellent progress. The work in this direction has been unusually satisfactory. The President and Faculty have steadily upheld me in every effort to make the Department efficient, and wherever it became necessary to remove a dead weight from the class he has been removed in every instance. To this simple fact I ascribe the success of the year's work. Laziness is as catching in a class as is small-pox, and just about as sure to destroy its usefulness. Wherever a student gets into such a state, either mentally or physically, that he cannot or will not study, it is in our judgment time for him to get out of the class. The standard of scholarship in the Department is now good, and we hope that we shall be able to at least hold it up to its present standard. The most serious difficulties with which we have to contend are lack of sufficient mental training upon the part of the students before entering the College, and that irrepressible restlessness which is so characteristic of all American youth, especially Southern boys.

In addition to my work as Professor of Chemistry in connection with the College, there is a heavy demand made upon my time by correspondence with farmers in different portions of the State. The farmers of the State appear to be anxious to utilize every resource at their command. We receive a great many letters of inquiry in regard to the proper manner of using fertilizers, of preparing composts, of improving worn out lands, of using resources at the command of the farmer, such as marls, cotton seed, cotton seed meal, etc, many of which require much investigation and careful study in order to answer properly.

In addition to this there is a large amount of analytical work sent in, which we endeavor, as far as our means will permit, to attend to. Few persons outside of the laboratory know the cost of this kind of work, both in time and chemicals. While we are willing, as far as is reasonable, to give our time to the public, we cannot afford to give the chemicals.

I would remind the Board that this Department of a college is always expensive:

1. Because the materials used are costly.

2. Because we have to employ educated and skilled assistants; no others will answer.

3. Because people all over the State persist in thinking, or act as if they thought, that the chemist is a man who can analyse without expense. They have no hesitation in collecting together a package of specimens, and forwarding with the request that they be analysed at once. It costs several days work and a large amount of chemicals to do this. Who is to pay for it? The Chemical Department. There is more work sent into the laboratory than any one man can do.

In order to meet the demands upon us we must have one skilled assistant, and if they continue to increase, we will require two. In spite of all our exertions we do not keep the work cleared up as fast as it comes in. We have during the last year made over one hundred analyses, the most of them being fertilizizers, marls and minerals. The fertilizers and marls, together with a few waters and minerals, were complete quantitative analyses, and required great care. The remainder were either qualitative or only partial quantitative analysis. My assistant, Mr. H. H. Harrington, has selected from notes in the laboratory a few of the analyses which may be of interest, and show the kind of work done.

The marls have all been selected without any special directions from the State Chemist. We suppose, however, they represent fair samples. Below are given the results, as determined by duplicate analyses:

Marl from Aberdeen, Miss.:

Sand and silica	78.79	per cent.
Volatile and organic matter	8.38	"
Water (at 110 deg. C.)	3.08	"

Oxide of iron and alumina	1.52	"
Lime (C. A. O.)	5.03	"
Carbonic acid (C. O. 2)	1.20	"
Magnesia	Trace.	
Manganese	Absent.	
Sulphuric acid (S. O. 3)	.20	"
Phosphoric acid (P. 2 O. 5)	.31	"
Potash (K. 2 O.)	.79	"
Soda (N. A. 2 O.)	—	
Loss	.70	"
Total	100.00	

Marl from Enterprise, Miss.:

Sand and silica	76.40	per cent.
Volatile and organic matter	9.00	"
Water	2.54	"
Oxide of iron and alumnia	1.21	"
Lime	6.72	"
Carbonic acid	1.32	"
Magnesia	.61	"
Manganese	—	
Sulphuric acid	.10	"
Phosphoric acid	.68	"
Potash	1.10	"
Soda	Trace.	
Loss	.32	"
Total	100.00	

Marl from Columbus, Miss.:

Sand and silica	53.65	per cent.
Water	2.29	"
Organic and volatile matter	8.21	"
Lime	11.64	"
Carbonic acid	1.47	"
Oxide of iron and alumina	17 26	"
Magnesia	1.44	"
Manganese	—	
Sulphuric acid	1.21	"
Phosphoric acid	1.66	"
Alkalies (K. 2 O. and N. A. 2 O.)	Trace.	
Loss	1.17	"
Total	100.00	

Marl from Meridian, Miss., "green sand:"

Sand and silica	33.18	per cent.
Water	3.72	"
Organic and volatile matter	8.28	"
Oxide of iron and alumina	9.45	"
Lime	26.31	"
Carbonic acid	16.52	"

Magnesia	—	
Manganese	—	
Phosphoric acid	.51	“
Sulphuric acid	Trace.	
Potash	.84	“
Soda	.21	“
Loss	.98	“
Total	100.00	

Marl from Meridian, Miss., “white marl:”

Sand and silica	16.91	per cent.
Water	1.20	“
Organic and volatile matter	3.00	“
Oxide of iron and alumina	20.75	“
Lime	31.26	“
Carbonic acid	20.08	“
Magnesia and manganese	—	
Phosphoric acid (average of five analyses)	4.95	“
Sulphuric acid	1.10	“
Potash	.64	“
Soda	Trace.	
Loss	.11	“
Total	100.00	

Fire-clay, Vicksburg, Miss.:

Sand and silica	69.25	per cent.
Water	5.83	“
Organic and volatile matter	8.44	“
Oxide of iron	6.13	“
Alumina	7.82	“
Lime	.96	“
Magnesia	Trace.	
Manganese	—	
Potash	Trace.	
Soda	.31	“
Phosphoric acid	—	“
Sulphuric acid	.84	“
Carbonic acid	Trace.	
Loss	.42	“
Total	100.00	

The fire clay has been inserted instead of a marl. All the samples as they came to the Laboratory were almost air dry, though they were not afterwards completely so dried by the analyst. There is nothing remarkable in the composition of the marls, save the “White marl from Meridian.” It will be noticed that this one contains an unusually large amount of phosphoric acid, and also of lime, while the per cent. of sand is very small—making it as a base for a fertilizer, one of the very best marls that can be obtained—the sample as sent to us gives evidence of being the richest fertilizer in the State.

IN CONCLUSION.

The Department is well organized.

The facilities offered to students in it are most excellent. The equipment for chemistry is quite complete. The students are numerous, working well and making excellent progress. The standard of scholarship is high. We have every prospect of success before us, and not a single indication of failure. We are not only educating the students, but we are in communication with farmers in many portions of the State giving information and lending them a helping hand wherever we can, even travelling long distances to meet their clubs and societies. We are doing an amount of analytical work almost equal to that done by most of the agricultural stations in this country. This work costs only a few hundred dollars for chemicals, say a thousand dollars for apparatus, and the labor each year. This, in addition to the fees collected from the students for the chemicals used by them, is sufficient to bear the expenses of the Laboratory.

Respectfully submitted,

JOHN A. MEYERS.

REPORT OF STATE CHEMIST.

Gentlemen of the Board of Trustees of Mississippi A. & M. College:

By an Act of the last Legislature, your Professor of Chemistry is made State Chemist, and is required to analyze and assign to all commercial fertilizers sold in the State, their chemical composition and relative commercial values. The law, and also yourselves, have recognized these duties as distinct from those of the Professor of Chemistry, as they really are. It will no doubt, however, afford you pleasure to know that the provisions of the law have been carefully carried out, and all of the fertilizers sold in the State have been analyzed in our Laboratory. A sample of each is also preserved in the Laboratory, where any citizen of the State or other person interested in them, can examine them, and also obtain any information concerning them that he may desire.

Report of the Analyses and Valuation of the Commercial Fertilizers sold in Mississippi during the Spring of 1883.

BY JOHN A. MYERS, STATE CHEMIST.

In making this Report of the Composition and Value of the Fertilizers, the State Chemist does not claim that it is complete. But the list embraces all brands sold in the State, so far as he is aware. There may still be a few brands offered for sale, but if so, they are not extensively sold, and the manufacturers have rendered themselves liable to heavy penalties.

This is the first year that any law regulating the sale of fertilizers has been put into operation in the State. We have heard of several brands being shipped out of the State since the law went into force, and we are not aware of any brands of "doubtful composition" now being sold in the State.

The sale of fertilizers in the State is much less than in some of our sister States, where the system of inspection is much more rigid than here. We are fully aware of the value of good fertilizers and we believe that their sale will be largely increased each year. But until a more rigid system of inspection is adopted, there is no very great security against fraud. A more rigid system, we are convinced, will be better for every one interested in the business.

TO DEALERS AND AGENTS.

You may rest assured that you will best serve your own interest by carefully studying the analysis of the different brand of fertilizers offered for sale in the State, and selecting only those which, from their composition, are known to be of fair quality. It is to your interest to build up a business in which the farmers will have confidence. They may be induced to buy an indifferent article once or twice, but the effect of unfair dealing will fall sooner or later, upon the guilty parties.

The prices adopted are high enough to permit you to have a fair margin upon the fertilizers without charging the farmers higher prices than those assigned. We advise farmers not to pay more, as other brands can be had that will be just as good for these prices or less. We have been very liberal in our prices, and we wish to see the business extended as much as possible in the State.

In past years, the trade has suffered very seriously by poor articles being offered at high prices; and the farmers thereby losing confidence in Commercial Fertilizers. This can only be overcome by time and strict honesty upon the part of dealers and manufacturers.

TO MANUFACTURERS.

We have had a few complaints from you about the results of the analyses. It is our duty to determine the composition and value of the fertilizers as found in the market of Mississippi. We employ the method of analysis that is generally adopted by the State Chemists in this country, for the determination of the value of fertilizers. It is known as the "Washington Method," because adopted by the chemists who assembled there a few years since to agree upon some uniform method of analysis of fertilizers. We are aware that it has its defects, but as long as it continues to be the method in general use, it is as fair for one manufacturer as for another. It may not give as large a percentage of phosphoric acid as some other methods, but if the fertilizer is finely ground it gives the manufacturer a considerable advantage over the manufacturer of coarser preparations, especially in the case of bone phosphate.

By this method of analysis if the chemists for the fertilizer factories allow the citrate of ammonia to act for a longer time or at a higher temperature than has been agreed upen by the State Chemists, it dissolves more of the fine ground bone, and hence their result will show a greater per cent. of phosphoric acid than the State Chemists obtain. Complaints, therefore, based upon determinations made in this way or by any other modification of the adopted system, receive very little attention.

The determinations appear also to be disturbed by the presence of marl (carbonate of lime, etc.,) and cotton seed hull ashes. We have not had opportunity of determining exactly what the disturbing action is, but if the claims of some of our manufacturers are not incorrect, or if they have not made some mistake in their goods, it is inconsiderable.

According to this system, all goods of the same class are treated exactly alike, which is as fair for one manufacturer as for another.

We have used the following prices for the determination of the value of the fertilizers:

Available phosphoric acid (soluble and precipitated)	12½	cts. per lb.
Nitrogen	25	cts. per lb.
Potash	6	cts. per lb.

We consider the soluble and precipitated phosphoric acid worth the same and allow the manufacturer nothing for the insoluble phosphoric acid present. We do not claim that the insoluble phosphoric acid is not available for plant food, or that it may not readily become so. We consider it of great value to the plant, especially under certain conditions, but in view of the liberal price allowed for the so-called available phosphoric acid, we neglect the insoluble in the calculation.

The nitrogen is determined as ammonia by the soda-lime process, except when nitrates are present, in which case the absolute process is employed.

The analyses given in the following table were made upon samples sent to the State Chemist, as required by law, by the manufacturers or their authorized agents, and the affidavits of the manufacturers declaring them to be fair samples of the goods as offered for sale in Mississippi, are on file in our Laboratory. They may be considered as fair as single samples could well represent large bulks of manufactured products.

We do not expect to find the amounts claimed by the manufacturers in every case, nor that they will always be satisfied with the results; but if they send us samples, selected according to our directions, we expect to obtain the correct results and values for the goods as represented by the sample sent, which will be pretty near their average value.

NAME OF BRAND OF FERTILIZER.	MANUFACTURER.	ADDRESS.	MOISTURE....	SOLUBLE PHOSPHORIC ACID........	REVERTED PHOSPHORIC ACID........	TOT'L AVAILABLE PHOSPHORIC ACID	INSOLUBLE PHOSPHORIC ACID........	NITROGEN....	EQUIVALENT TO AMMONIA......	POTASH.......	VALUE PER TON, ADOPTED PRICE....
Ammoniated Guano	Lorentz & Rittler	Baltimore, Md	12.83	7.17	2.38	9.55	2.20	1.80	2.19	2.10	$35 39
DeSoto Ammoniated Dissolved Bone	DeSoto Oil Co. M	Memphis, Tenn	9.85	6.79	2.38	9.12	.55	2.52	3.05	3.80	40 00
Soluble Sea Island Guano	The Rasin Fertilizer Company	Baltimore, Md	11.75	4.22	2.47	6.69	4.22	1.91	2.30	2.47	29 73
Homestead Guano. A Bone Black Fertilizer	Michigan Carbon Works	Detroit, Mich	10.98	8.86	.54	9.40	1.38	3.32	4.02	....	40 10
Rock City Superphosphate	National Fertilizer Company	Nashville, Tenn	11.01	8.17	.67	8.84	2.54	1.89	2.30	1.98	33 81
Tennessee Superphosphate	National Fertilizer Company	Nashville, Tenn	10.99	8.10	3.37	11.47	4.16	1.90	2.24	2.36	41 00
Good Luck Guano	The Geor. W. Miles Company	Milford, Conn	10.01	12.49	1.76	14.25	2.35	2.80	3.40	2.09	52 12
Miles' I. X. L. Ammoniated Bone Superphosphate	The Geor. W. Miles Company	Milford, Conn	10.21	12.17	2.34	14.51	2.79	1.55	1.98	2.12	46 56
Georgia State Grange Fertilizer	Baldwin & Co	New York	11.72	10.34	2.59	12.93	.65	2.50	3.03	1.94	47 14
Lister's Standard Pure Bone	Baldwin & Co	New York	11.94	10.69	1.87	12.56	....	2.67	3.23	1.03	45 98
Manipulated Marl	H. F. Baley	Jackson, Miss	7.86	.49	2.12	2.61	.84	1.01	1.33	1.17	12 97
National Bone Phosphate	N. W. Fertilizing Company	Chicago, Ill	9.79	6.96	4.25	11.21	2.89	1.64	2.00	.86	37 45
Barber's Phosphate	N. W. Fertilizing Company	Chicago, Ill	9.80	6.20	4.37	10.57	2.97	1.56	1.89	.90	37 31
Brown's Cotton and Corn Fertilizer	Robert B. Brown	St. Louis, Mo	9.00	8.49	2.28	10.77	.49	2.47	2.99	3.82	41 65
Soluble Pacific Guano Company	Pacific Guano Company	Boston, Mass	11.21	6.02	4.40	10.42	4.62	2.44	2.96	1.90	40 53
Stern's Ammoniated Raw Bone Superphosphate	Stern's Fertilizer and Chemical Manufacturing Company	New Orleans, La	12.02	9.45	1.59	11.04	1.71	2.34	2.85	2.65	42 48
Patapsco Ammo'ted Soluble Phosphate	Patapsco Guano Company	Baltimore, Md	12.13	5.96	2.91	8.87	3.75	2.02	2.44	1.30	33 83
Ammoniated Dissolved Bones	John Merryman & Co	Baltimore, Md	12.42	6.64	3.30	9.94	2.83	2.53	3.07	....	38 60
Standard Fertilizer	Columbus Oil Mills	Columbus, Miss	8.98	4.14	5.22	9.36	.90	3.42	4.15	2.73	42 76
Soluble Sea Island Guano	Harrison, Salleck & Bush	Macon, Miss	9.01	1.96	2.61	4.57	3.56	2.68	3.25	1.78	26 55
Ammoniated Superphosphate. Royal C Brand	A. A. Green	Jackson, Miss	8.90	9.18	1.49	10.67	1.49	1.50	1.82	3.32	38 65
Plow Brand Raw Bone Superphosphate	Walton, Whann & Co	Wilmington, Del	10.10	5.99	4.50	10.29	5.79	2.16	2.62	2.70	39 74
Farmer's Friend	Read & Co	New York	11.23	6.45	2.83	9.28	1.92	2.44	2.97	.92	35 50
Ammoniated Bone Superphosphate	J. J. Turner & Co	Baltimore, Md	12.50	7.81	2.23	10.04	2.84	2.16	2.64	1.82	38 08
Empire Guano	R. W. L. Raisin & Co	Baltimore, Md	11.50	1.03	6.78	7.81	2.46	1.83	2.23	1.03	29 90
Harle & Co's. Raw Bone Guano	Jas. W. Harle & Co	Atlanta, Ga	11.60	1.31	6.66	7.97	2.81	2.11	2.55	.94	31 59
The Sovereign Ammoniated Superphosphate	Clarke's Coal Guano Company	New Bedford, Mass.	9.89	6.47	4.24	10.71	1.81	2.31	2.79	2.55	41 38
DeLeon's Complete Cotton Fertilizer	R. W. L. Raisin & Co	Baltimore, Md	10.85	6.17	3.75	9.82	1.85	2.97	3.61	1.17	41 05
Bat Guano Ash	Alex. Couacher	San Antonia, Tex.	5.27	....	8.56	....	9.42	....	....	3.09	43 61
Texas Bat Guano	Alex. Couacher	San Antonia, Tex.	7.85	....	8.24	....	5.74	2.49	3.04	2.14	35 81
Garden City Superphosphate	North Western Fertilizing Company	Chicago, Ill	8.93	6.96	.77	7.73	5.07	1.59	1.92	1.64	27 73

Ammoniated Dissolved Bone	North Western Fertilizing Company	Chicago, Ill	8.72	7.03	3.89	10.92	2.39	2.50	3.03	2.40	$41 83
Knickerbocker Dissolved Bone	North Western Fertilizing Company	Chicago, Ill	9.27	6.91	3.20	10.11	2.62	1.62	1.96	1.24	34 85
Georgia State Grange Dissolved Bone	Baldwin & Co	New York	12.90	12.82	.17	12.99	.79	....	....	....	32 47
Acid Phosphate for Composting	National Fertilizer Company	Nashville, Tenn	10.95	8.06	1.49	9.55	5.00	....	....	2.70	27 11
Greens' Superphosphate	A. A. Green	Jackson, Miss	9.65	2.34	4.67	7.02	2.34	....	....	2.35	20 39
Acid Phosphate	National Fertilizer Company	Nashville, Tenn	10.97	12.03	2.50	14.53	2.11	....	....	....	36 20
*Pure Bone Meal	National Fertilizer Company	Nashville, Tenn	....	....	....	....	23.12	3.15	3.83	....	35 00
Challenge Phosphate	North Western Fertilizing Company	Chicago, Ill	12.32	2.59	5.92	8.51	.89	2.34	2.84	....	32 97
Diamond Soluble Bone	Walton, Whann & Co	Wilmington, Del	12.75	7.36	5.85	13.21	1.62	....	....	....	32 05
†Stern's Pure Ground Bone	Stern's Fertilizer and Chemical M'f'g Co.	New Orleans	....	....	....	....	21.76	4.26	5.17	....	40 00

*Bat Guano and Bat Guano Ash are new fertilizers in the market, and it is difficult to affix even *relative* values as fertilizers. They are certainly not equal to imported Guanos. They are of varying composition, and, if we judge by samples sent here for analysis, are of very different physical characters. A portion of the Nitrogen is, no doubt, as available for plant food as in ordinary Guano. The phosphoric acid present is almost insoluble in water, but is probably more readily appropriated by the plant than it is from bone phosphate. I will be obliged if those who have used these fertilizers this year will correspond with me in regard to them.

†The value of bone meal as a fertilizer depends upon the fineness of the meal and the quality of the bones. Both of these offered in this State are pure bone meal. The values assigned are relative, but both higher than the farmer should pay for them. The manufacturers should be able to sell them at fair profits for from $30.00 to $35.00 per ton. This will, of course, depend upon the supply from which the bones are derived. The values cannot be determined by the adopted scale of prices.

DEPARTMENT OF ENGLISH

AGRICULTURAL AND MECHANICAL COLLEGE,
November 14, 1883.

Gen. S. D. Lee, President

SIR: In accordance with your instruction, I have the honor to submit the following report:

The Department of English in the Agricultural and Mechanical College of Mississippi has been under my control as Professor of English since September 19, of the present scholastic year.

The aims of this Department, as long as I shall have the honor of being its head, will be:

1. To give such a knowledge of our vernacular, by the analytic and synthetic methods of instruction as shall make students accurate and ready in the use of both the written and the spoken language.
2. To make their advancement in this Department so correspond to their progress in the science taught here, that they shall be able to express in correct and perspicuous English the ideas obtained from their scientific instruction
3. To afford such a liberal culture in the literature of our language, by means of lectures and the study of text books, as shall conform the student's tastes to a correct standard and cultivate his own aptitudes for expressing original thought.

With the very able and cordial help of Assistant Professor Dabney Lipscomb, I hope to carry out the objects outlined above in a manner so practical that no student shall complete the collegiate course in English without having obtained such an accurate, concise and ready use of our mother tongue as shall fit him for the highest duties of American citizenship of which his natural abilities make him capable.

Preparatory Department.

At the last meeting of the Board of Trustees of the Agricultural and Mechanical College the Preparatory Department was placed under the joint supervision of the heads of the Departments of English and Mathematics.

The supervision in my Department is performed by my presence in the section rooms of the several instructors, whenever practicable, and by a series of institutes, held weekly, at which the work for the previous week is reported, the work for the incoming week planned and discussed, and the methods of teaching the subjects pursued exemplified by both the instructors and the head of the Department of English; and these exemplifications are subjected to a thorough discussion and criticism.

The above report of the Department of English in the College classes and in the sections of the Preparatory, is respectfully submitted.

W. H. MAGRUDER,
Professor of English.

DEPARTMENT OF MATHEMATICS.

AGRICULTURAL AND MECHANICAL COLLEGE,
November 15, 1883.

Gen. S. D. Lee, President:

The Department of Mathematics may be said to embrace studies that are taught in the four college classes and the studies of the Preparatory Department of the institution. The Preparatory Department gives a course of instruction that requires two years for its completion. The instruction in mathematics in that Department includes a thorough course in arithmetic that lasts the whole of the first year and two-thirds of the second. The last third of the second year of that Department the study of algebra is begun. But it will be seen from what is here stated that most of the time of the students in that Department is given to arithmetic. This is necessary, for the majority of students who enter there have had but little instruction, and that generally of a desultory character, in arithmetic. This Department, it may be said, suffers in efficiency, because of the poor preparation of a primary and secondary grade, found in most of the students who come into it. This can only be remedied by the maintenance by the State of schools in every neighborhood of a high character, whether these common schools be supported by public or private funds.

In the College, in the Department of Mathematics, the course covers the subjects of algebra, plane and solid geometry, plane and spherical trigonometry and a course of three months in surveying; mechanics during the junior year, and in the senior year a course in astronomy and civil engineering—three months to each.

The Department is well equipped and the best instruments are used in surveying. But astronomy can only be taught theoretically, for this department has no instruments used by astronomers for observations. The course in astronomy, however, as given, is quite a thorough one and quite the equivalent of that given in the best colleges in the United States. But it may be deemed wise, at some time in the future, and desirable for the State, that a few of her sons, seeking a more technical knowledge of astronomy, the State should provide the means for their attaining it, as such knowledge is of value to specialists who might engage in the various scientific employments, such as surveys and astronomical calculations of the United States Government

Throughout the course of instruction in the College Department of Mathematics the result of the scant preparation of the students before they enter the College at all is felt, as it is in the preparatory years of this Department, for a large number of those who enter the freshman class have not been through the preparatory school here, and many come from their home schools but poorly prepared to receive the instruction to be given here. It may be wondered, then, why some young men, poorly prepared, are allowed to enter the freshman class at all. When a youth comes here between sixteen and twenty years, that is to say, when mature enough to apply persistently his mental faculties to hard work, it is, for some reasons, desirable that he should enter the freshman class; for, one reason, it is not the good fortune of most boys to go to college away from home for more than four years. Indeed, of our youth who go to College, it cannot be said that most have the privilege of going so long as four years. Hence, often men are admitted into the freshman class of the College, mature enough in years, but not in mental discipline. Perhaps the best remedy for this is that mentioned for the same lack in the others who enter the preparatory, namely, that the youth who come here expecting to enter the college classes should have good thorough training in schools before they come here.

The Preparatory Department of the College was put by the Board of Trustees under the joint supervision of the Professors of English and Mathematics. Hence, it has been spoken of in this connection in so far as it concerned the Department of Mathematics. Connected with the Department of Mathematics, then, as teachers of that branch, are the professor of the department, the assistant professor, the first assistant in the Preparatory Department, and two other teachers in that department.

The professors of English and Mathematics, together with all the assistants of the Preparatory Department, hold with themselves a teachers' institute every Friday afternoon, between half-past two and four o'clock. Thus matters in connection with the preparatory classes, are thoroughly discussed.

The professor in charge of the Department of Mathematics teaches four classes daily. The assistant professor, who is also Commandant of Students, teaches three classes daily, and each of the assistants of the Preparatory Department, connected with this Department, teaches daily four classes.

Respectfully submitted,
ANSELM H. JAYNE,
Professor of Mathematics.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

A. & M. COLLEGE, MISS.,
November 14th, 1883.

To Gen. S. D. Lee, President A. & M. College, Miss:

SIR—I have the honor to submit the following report of the Department of Military Science and Tactics:

By virtue of an Act of Congress, the military department in every A. & M. College accepting assistance from the United States Government is obligatory in that to the gift of land is joined the condition certain branches of science shall be taught, including military tactics.

Realizing the necessity of educating its "citizen soldiery" in the science and art of war—since on them our country would mainly depend—the United States Government has detached from active line service thirty (30) officers of the Regular Army, who are detailed for a period of three (3) years to act as professors of military science and tactics in the class of colleges above referred to. For acquiring practical knowledge and instruction, the General Government has furnished to each of these colleges on application, two (2) field pieces with equipments and ammunition, and one hundred and fifty (150) Springfield rifles, with blank and ball cartridges. At the end of each session, the Adjutant General of the U. S. Army requires of the officer so detailed, a report of the progress made, together with the interest taken in military instruction and drills by the Faculty and students, and the discipline at the college.

There are between forty five (45) and fifty (50) of these colleges, and, in consequence, the supply of officers does not meet the demand, for which reason it is presumed the Adjutant General of the U. S. Army has just made the following recommendations:

"That the law be so amended as to require a certificate that at least one hundred and fifty (150) pupils above the age of fifteen (15) are actually present at the institution; that the Governors of the States should be required to designate to what colleges the detail should be made, and that the detailed officer should be a recognized member of the Faculty, with an equal vote, and not a mere prefect of discipline, etc., etc."

The following, in addition, has just been received:

[COPY.]

WAR DEPARTMENT.
ADJ. GENL.'S OFFICE, WASHINGTON, D. C.,
November 3d, 1883.

Lieut W. L. Buck, 13th Infantry, Prof. of Military Science and Tactics, Agricultural and Mechanical College of Mississippi, Oktibbeha County:

SIR—The Secretary of War directs that you make a special report to this office, at as early a date as practicable, showing the maximum number of students at the institution of learning at which you are now serving, who habitually drill and engage in all armed duties. Very respectfully, your ob't servant,

[Signed] R. C. DRUM., Adjutant General.

The Professor of Military Science and Tactics at your College does enjoy the privileges recommended, which is the more appreciated, in that they are granted not through compulsion, but voluntarily, by the College authorities.

In compliance with Special Orders No. 46, Washington, D. C., Feb. 24, 1883, I reported in person to Gen. S. D. Lee, President, as Prof. of Military Science and Tactics, relieving 2d Lieut. E. B. Bolton, 23d Infantry, March 13th, 1883.

As Prof. of Military Science and Tactics, I instructed part of the Senior and Junior classes in Tactics, by recitations, and the whole body of students by company and battalion drills. The former were instructed also in artillery firing.

Gen. S. D. Lee, President, having stated that it was the wish and desire of the Board of Trustees that the officer detailed should act as such, at their request I became

COMMANDANT OF STUDENTS,

by whom the discipline is directly applied and to whom reports, excuses, explanations and permits are first submitted. On relieving my predecessor as Commandant, March 16th, 1883, the battalion was already organized and there were recitations in tactics and drills—company and battalion—weekly.

Finding that a great many demerits were being recorded against the students, a system of extra tours as "sentinel without charge" was recommended for offenses of a certain character, and being approved by the President, was carried into effect. The first month of its operation showed several hundred demerits less than the month previous for the whole body of students.

THE DISCIPLINE,

As shown by the conduct of students in the class-room and in the field, is good, and it is believed that by reason thereof more benefit was derived by the student and less trouble given the Professors and Instructors. The discipline is impartial, firm, but not severe, and permeates every department. Its chief aim and object is to compel, with as little severity as possible, prompt and cheerful obedience to, and respectful, quiet demeanor towards, the College authorities, orderly conduct in the dormitory, section-rooms, chapel, mess-hall and in the field. Discipline compels regular habits of rising and retiring, regular hours for meals, healthful exercise, systematic application to studies and regular work in the fields.

THE MILITARY FEATURE

Is the most effective means of enforcing discipline. The company and battalion organization gives to the officers and non-commissioned officers acquaintance with the proper exercise of authority, and the students acquire habits of obedience to all properly constituted authority. The Foremen of the farms, the Instructors and Professors all realize the saving of care and trouble in their duties by reason of this prompt and cheerful obedience on the part of the students, who in turn are benefited in the saving of time and the acquisition of habits of obedience, and are thereby made better citizens of their State, and better citizens of their country, for respect for, and prompt obedience to law is thereby inculcated, which, in the citizens as a whole, makes the difference between the quiet, law-abiding community and lawlessness and anarchy. The military feature is subservient to, and the discipline is made to conduce to, the furtherance of the principal aim and object of the College—its industrial feature.

Very respectfully, your ob't servant, WM. L. BUCK,

2d Lieut 13th Inf'y, Professor of Military Science and Tactics.
and Commandant of Students.

DEPARTMENT OF MECHANICAL AND FREE-HAND DRAWING.

AGRICULTURAL AND MECHANICAL COLLEGE,
November 14, 1883.

Gen. S. D. Lee, President Agricultural and Mechanical College of Mississippi:

SIR: I have the honor to present this, my second report, since I have been in charge of this department.

The appropriation made by the Trustees last June has procured for the department,

1. Twenty-four small tables and the same number of stools.
2. A box of New American Drawing Models; that is, wooden solids of various forms.
3. Twenty four large plates of industrial drawings, mounted on paste-board.

This collection enables the students to have an insight into the various constructions of carpentry and machinery, besides training them to the correct perception of form and careful delineation of it by accurately copying outline forms.

My class is much fuller than last year and I am glad to be able to report a good record for cheerful and diligent work among the students of the department.

The following is the statement of attendance:

First Term—Mechanical drawing, 23.
Second Term—
Third Term—Free-hand drawing.

The lessons are given as last year by class lectures, and the time devoted to the subject, one hour per day, is divided about equally between these lectures and the drawing of the progressive series above mentioned. In the former the aim is to train the imagination of the students to apprehend clearly and quickly the exact appearance of any object by description, a very necessary faculty in the practical engineer, and in the latter, to train them to perfect accuracy and master like execution in the drawing of problems. I am in hopes to add to the collection of drawing copies some superior specimens of students' work during the term, and thus indicate the progress made.

The labors of the past year, slight and imperfect though they may seem, have yet laid the foundation for the up-building of a successful department—a department that shall be worthy of the Agricultural and Mechanical College and an honor to the State.

Very respectfully, yours,
ADOLPH ZUCKER, C. E.,
Instructor in Drawing.

REPORT OF PENMAN.

AGRICULTURAL AND MECHANICAL COLLEGE,
November 14, 1883.

Gen. S. D. Lee, President:

DEAR SIR: As Penman, I would report that we are now giving instruction to the following classes, viz: Sophmore, Freshman and Preparatory—about 140 students.

The sophmore class is studying the italics; the freshman classes are studying the theory of penmanship and practicing from the higher numbers of the copy-books.

The preparatory classes are also in the theory and are practicing from the lower numbers of the books.

We illustrate our work on the board and charts; also, practice on the board.

Everything considered, this department, I believe, is making better progress than at any previous time.

Respectfully submitted,
W. H. GIBBS, Penman.

REPORT OF COLLEGE SURGEON.

AGRICULTURAL AND MECHANICAL COLLEGE,
December 1, 1883.

Gen. S. D. Lee, President:

DEAR SIR: I have the honor to submit the following report as to the duties that have devolved upon me as Surgeon of the College, since my election on the fifteenth day of last September.

First, I have to pay strict attention to the sanitary condition of the place, which I found good.

I meet the students at the hospital every morning at 7:45, and grant excuses to those who are unable, on account of sickness, to perform the duties of the day. I have regular hours at my office at the hospital, from 7:45 to 8:30 and from 10 to 11 A. M., and from 2 to 3 P. M. I am also to do whatever else is required of me as Health Officer by the President. I have to decide when the peculiar state of the weather requires, in the interest of health, the cessation of any duties to be performed by or required of the students. I am to look into the matter of diet for students at the Mess Hall; also, to see that the nurse carries out my directions as to the giving of medicine, and having such food as I see proper for the sick in the hospital. I am to see that the proper discipline is kept at the hospital.

As compensation for above work I am paid a fee of $5 per session by each student.

The hospital stands upon the best drained site on the grounds, with a gradual slope from all sides. The building is well constructed and well arranged, with four large rooms, capacitated for four or six beds, with best fire-places. Also, four smaller rooms, all of which are furnished with good bedsteads and spring mattrasses. There is also a good heating stove to warm water and food, etc., for the sick.

We have a well trained nurse, whose duty requires him to sleep at the hospital, and be there at all hours, giving his whole time and attention to the sick when necessary.

Now, with my undivided attention, and the whole time of the nurse, and with your general supervision, I am satisfied that a sick student at the Agricultural and Mechanical College is as well cared for, as well nursed, and gets diet as appropriate, as can be obtained at any place in the State.

Very respectfully submitted,
W. H. BARR, Surgeon.

REPORT OF STEWARD.

AGRICULTURAL AND MECHANICAL COLLEGE,
December 3, 1883.

Gen. S. D. Lee, President Agricultural and Mechanical College of Mississippi:

I respectfully submit the following report of my Department:

BUILDING.

The building is large and comfortable, with sufficient room for three hundred and fifty students. Also, large store-room, kitchen and room for bake oven; double story, with Society rooms overhead.

OUTFIT.

One large range and fixtures, one large bake oven, dining-room furniture, tables, chairs, with sufficient crockery ware for two hundred and fifty students. Also, wagon and team for hauling.

SUPPLIES.

Supplies for students are purchased to best advantage, and at end of each month board is charged to students at actual cost. Price of board for past three sessions has averaged $9 04. While the fare is plain, every effort is made to have good, substantial food. We give them fresh beef. mutton and pork, bacon, vegetables in season, coffee, tea and milk. It should be remembered that in the amount charged for board is included hire of servants for sweeping halls of dormitory, the cost of servants, and extras for sick at hospital, also the oil used by students. The Department is in efficient working order, and very thoroughly equipped.

Respectfully submitted,
W. B. LUCAS, Steward.

LAWS OF CONGRESS RELATING TO THE COLLEGE.

AN ACT, donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty. *Provided,* That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted,* That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections, or subdivisions of sections not less than one-quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty five cents per acre, to which said State may be entitled under the provisions of this Act, land scrip to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever; *Provided,* That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty five cents or less per acre; *And provided further,* That not more than one million acres shall be located by such assignees in any one of the States; *and Provided further,* That no such location shall be made before one year from the passage of this Act.

SEC. 3. *And be it further enacted,* That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the Treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted,* That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sales of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks, yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act, to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislatures of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experimental farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their cost and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionally diminished.

6. No State, while in a condition of rebellion or insurrection against the Government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years from the date of its approval by the President.

SEC. 6. *And be it further enacted*, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws; *Provided*, That maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this Act, shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved, July 2, 1865.

LAWS OF THE STATE RELATING TO THE COLLEGE.

AN ACT to establish and organize Agricultural and Mechanical Colleges, and to regulate the government of same.

WHEREAS, Section 8 of Article VIII of the Constitution provides that the Legislatures shall, as soon as practicable, provide for the establishment of an Agricultural College or Colleges, and shall appropriate the two hundred and ten thousand acres of land donated to the State for the support of such a College by the Act of Congress, passed July 2, A. D., 1865, or the money or scrip, as the case may be, arising from the sale of said lands, or any lands which may hereafter be granted or appropriated for such purposes; and,

WHEREAS, The State having accepted said lands and pledged its faith to appropriate the same to the endowment of said institutions of learning; therefore,

SECTION 1. Be it enacted by the Legislature of the State of Mississippi, That the institution known as the Alcorn University is hereby established as, and declared to be, an Agricultural College, for the education of the colored youth of the State, and to be hereafter known as the Alcorn Agricultural and Mechanical College of the State of Mississippi.

SEC. 2. Be it further enacted, That an Agricultural College is hereby established for the education of the white youth of the State of Mississippi, and shall be known as the Agricultural and Mechanical College of the State of Mississippi, and shall be located and organized as hereinafter provided.

SEC. 3. Be it further enacted, That the Governor of the State shall nominate and appoint, by and with the advice and consent of the Senate, nine persons for each of said Colleges to be Trustees, to serve six years, one for each of said Colleges, to be chosen from each Congressional District, and the remainder from the State at large; five of each Board of Trustees shall be chosen from practical agriculturists or mechanics, or selected from both, as may be deemed advisable. Immediately after they shall be assembled, in consequence of their first appointment, they shall be divided equally into three classes. The term of the first class shall expire two years from the date of their appointment, and the second class four years from the date of their appointment, and the third class at the expiration of six years, so that one-third may be chosen every second year; and if vacancies happen by resignation or otherwise, the Governor may make temporary appointments until the next meeting of the Legislature. The Governor shall be *ex-officio* a member of each of said Boards of Trustees, and shall act as President thereof in all of their meetings when present, but in his absence they may choose a President *pro tem.* Five of the Trustees of each Board shall be a quorum for the transaction of business.

SEC. 4. Be it further enacted, That the Secretary of State shall furnish a certificate to each Trustee within ten days after his appointment, notifying him that he has been so appointed; and if any Trustee fail for the space of thirty days to inform the Governor of his acceptance, then his appointment shall be void, and his place filled as heretofore provided in cases of vacancy.

SEC. 5. Be it further enacted, That each of the Boards of Trustees herein provided for, and their successors in office, be and the same are hereby declared to be a body politic and corporate by their respective names and styles, and shall have a common seal, and each in his own name shall sue and be sued, contract and be contracted with, and may own, purchase, sell and convey property, both real, personal and mixed.

SEC. 6. Be it further enacted, That the Governor shall, as *ex-officio* President, convene the Board of Trustees of either of said Colleges, to consider any business connected with the same, whenever he shall deem it expedient to do so.

SEC. 7. Be it further enacted, That the Trustees of each College shall elect a Secretary of the Board, whose duty it shall be to record in a well bound book all the proceedings had by said Board, and shall be allowed such compensation for his services as the Board may deem proper.

SEC. 8. Be it further enacted, That the State Treasurer shall be *ex-officio* Treasurer of both Boards of Trustees, whose duty it shall be to secure and safely keep all moneys belonging to the Agricultural and Mechanical Colleges, and to disburse the same under the orders of the Boards of Trustees.

SEC. 9. Be it further enacted, That each of said Boards of Trustees shall possess all the power that is necessary and proper for the accomplishment of the trust reposed in them, viz: the establishment and maintenance of a first-class institution, at which the youth of the State of Mississippi may acquire a common school education, and a scientific and practical knowledge of agriculture, horticulture and the mechanic arts; also of the proper growth and care of stock, without, however, excluding other scientific and classical studies, including military tactics. They may also adopt all such by-laws and regulations as they may deem necessary for that purpose, not repugnant to the Constitution and laws of this State or of the United States.

SEC. 10. Be it further enacted, That the Board of Trustees shall appoint the President and Professors of the College, and such other officers as they may think proper to put the College into successful operation, and shall make such laws, rules and regulations for the government of said officers as they may deem advisable. They shall regulate the course of study, rates of tuition, management of the experimental farm, the manner of performing labor and the kind of labor to be performed by the students, together with the course of discipline necessary to enforce the faithful discharge of the duties of all officers, professors and students.

SEC. 11. Be it further enacted, That the Trustees to be appointed as hereinbefore provided. shall receive as compensation for their services their actual expenses incurred in attending any of the meetings of the Board of Trustees, payable out of any funds belonging to the College.

SEC. 12. Be it further enacted, That the said Board of Trustees shall organize under the provisions of this Act as soon as practicable after their appointment, and the Trustees of the Agricultural and Mechanical College of the State of Mississippi shall immediately after their organization proceed to procure, by purchase or donation, a site for the location of the said Agricultural and Mechanical College, with an experimental farm thereto attached of not less than one hundred and sixty acres of land. In the selection of the said site and experimental farm, the Trustees shall look to the convenience of the people of every section of the State, the proximity of the proposed site to other public institutions supported in whole or in part by the State, with a view to giving the preference to localities least favored heretofore, and also the facilities for going to and from said College, the advantages and disadvantages of the different sites proposed, and shall locate the same at the place where most advantages are offered; *Provided*, The location shall be at a place known to be healthy; *and Provided*, That said Trustees shall give notice for sixty days in three newspapers published in this State that they will receive proposals and examine sites before locating said College.

SEC. 13. Be it further enacted, That the interest arising from the proceeds of the fund known as the agricultural land scrip fund is hereby set apart for the use and benefit of said Agricultural and Mechanical College, to be used in equal proportions for the benefit of the youth of both races and Colleges, and shall be drawn from the Treasury by the Board of Trustees on vouchers audited by the Board and approved by the Governor, and filed in the Auditor's office, and upon the filing of such vouchers the Auditor of Public Accounts shall draw his warrant on the State Treasurer for the same from time to time, as funds may be needed to pay the officers and professors of said Colleges, or for any other necessary and proper object connected with the said Agricultural and Mechanical College not inconsistent with the Act of Congress, approved July 2, 1862.

SEC. 14. Be it further enacted, That in order to establish financial equality in all respects between the Colleges herein provided for, a sum equal to the amount heretofore appropriated to the Alcorn University out of the principal arising from the sale of said land scrip, is hereby appropriated to the College provided for in section two of this Act, and the Trustees thereof shall be authorized to use the same in carrying out the provisions of this Act for the benefit of said College not inconsistent with the Act or Acts of Congress donating the same.

SEC. 15. Be it further enacted, That this Act take effect and be in force from and after its passage.

Approved, Feb. 28, 1878.